

# FLORIDA HEALTH NOTES



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## **Poisons and** --- ***Pesticides***

JANUARY



(Cover photo) Man has developed pesticides to protect his food and fibre supplies, his forest, pastureland and home from pests. These pesticides, through misuse, accident or by intent, may be harmful to man.

Household cleaning supplies, which may be harmful to an inquisitive youngster, should be kept in locked closets.



# POISONS <sup>a<sub>n</sub>d</sup> PESTICIDES

The protection of man and his health, his food and fibre supplies, his forests and pasturelands from the ravages of pests of all kinds is essential to the growth of Florida and the progress and well-being of its people.

To control these pests, man has developed chemical substances called pesticides. This all-inclusive term means insecticides, rodenticides, fungicides, herbicides and other chemicals to combat pests which prey upon man, his crops and his environment. However, pesticides through misuse, accident or by design, can be harmful to humans.

Many household products have been developed to help the housewife to clean and care for her home. Some cleaning, waxing and bleaching products, when taken internally, may be poisonous. Many of these common products are found under the kitchen sink and in bath and laundry rooms of every home in Florida. Some medicines can be harmful if taken in overdoses.

Deaths occur in Florida from these products usually because of mishandling, failure to comply with directions, or unawareness of the dangers from the chemicals. The State Board of Health, County Health Departments, Federal Government and many other public and private organizations are concerned with the widespread use of pesticides and the effect they may have on the present and future generations.

This issue of **Florida Health Notes** will tell you about poisons and how to protect your children; about the Poison Control Centers; and about the advantages and dangers of pesticide usage. Because so little is known about the effects of pesticides on human health, the Community Studies on Pesticides — Dade County was set up by the State Board of Health, the Dade County Department of Public Health, and the Office of Pesticides of the Federal Government to investigate the total effect of these chemicals.

## The Exploring Child

Of the 6055 reported cases of accidental poisonings in Florida in 1967, more than 3320 involved children under 10 years of age. A total of 29 children under the age of 15 years died of accidental poisoning during the same year.

Children under two years of age are most frequently poisoned. This is because of the children's curiosity and improperly stored cleaning compounds, medicines or pesticides. A child learns by exploring and should not be discouraged from investigating his environment. However, it is the parent's duty to see that the environment is free from hazards.

As a child begins to walk, he is able to reach into cabinets and onto shelves which were previously beyond his reach. As he progresses, he begins to climb and the products frequently swallowed were those which formerly were out of his normal reach. Children have a tendency to try and find out what is in a medicine chest, cupboard or closet. Soap powder, cleaning compound, petroleum products, polishes and internal medicines are often packaged in attractive boxes, bottles or cans which children frequently find easy to open.

The exploring child is poisoned because

- \* he cannot read the label to know that the ingredients are poisonous;
- \* he doesn't understand the dangers of drinking or eating unknown substances;
- \* he is naturally curious;
- \* his sense of taste has not developed enough to protect him from swallowing a dangerous chemical;
- \* he will frequently swallow anything he can get into his mouth; and

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### FLORIDA HEALTH NOTES

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Now that she can climb, the medicine chest is a delightful place for a child. However this activity could lead to a case of poisoning.

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\* he frequently associates what he eats with candy or something he likes.

The dangerous substances children swallow are frequently household items. Aspirin is the most common substance. This is followed by internal medicines, cleansing and polishing agents, insecticides, rodenticides (rat poison), herbicides (weed killers), and kerosene. Also, included in the list are cosmetics, poisonous plants and external medications. A common method of aspirin poisoning in children is over enthusiastic treatment. Sometimes the recommended dose is exceeded, and often adult aspirin dosage is given instead of children's aspirin.

One of the most general rules, and one of the most effective ways to avoid poisonings is to keep household products and medi-

cines out of the reach and out of the sight of children. A locked cabinet or closet is even better. Internal medicines should be stored separately from other household products and neither medicines nor household products should be stored near food. Similarities in the shape of containers, as well as the appearance of names of the substances, can lead to tragedy. There have been cases where camphorated oil has been given to youngsters in the mistake that it was castor oil.

Sometimes poisonings occur because the potentially toxic substances were placed in other than the original container. Young children learn to make associations . . . in fact they are educated along these lines. Children have been taught to associate cups, drinking glasses, soft-drink bottles, bowls and cooking utensils with food and drink. In 70 per cent of the cases in which children consumed cleansing or polishing agents, the products were not in the original container but someone had left some of the material in a bottle, glass or cup and the child drank it.

## The Poisoned Adult

Some 1830 adults over the age of 20 years were seen in Florida's hospitals during 1967. Some of these persons were poisoned because they were too sleepy or ill to read the label on the medicine



A child may not know that pills are not candy. The majority of poisonings of children involve internal medicines.

bottle and took an overdose, or the wrong kind of medicine. Elderly people accidentally took overdoses because of senility or poor eyesight. A number of people tried to commit suicide. In 1967, 218 persons ended their own lives by taking poison.

Each year some agricultural workers, chemical plant formulators and pest control operators suffer illnesses or intoxication from mishandling or misuse of pesticides or from over-exposure to heavy concentrations of toxic materials. Workers in those occupations which use pesticides frequently are urged to use safety clothing and equipment — gloves, goggles, masks — to protect themselves from the dangerous materials.

However, because of the warm climate, some workers will remove their safety clothing as soon as their foreman or supervisor turns his back. They unnecessarily expose themselves to the toxic materials and fail to realize that they are in danger.

There have been cases where workers in chemical plants have been known to remove their rubber gloves and scoop up concentrated pesticide in their bare hands to add to the mixture with which they were working. Some workers also fail to understand the necessity of taking showers after working with pesticides and leave the chemical plants after work with the pesticide dust still on them — contaminating themselves and everyone around them. Many owners and managers of Florida's chemical and pesticide-mixing plants carry on a continual industrial hygiene program for their workers. These programs teach the workers to take precautionary measures when working with pesticide concentrates.

## **How to Avoid a Poisoning in Your Home**

Usually cases of poisonings could have been avoided. Every parent can avoid poisonings in his home by following a few simple precautions and by close supervision of his children's activities.

You can avoid a poisoning in your home by the following precautions:

- \* **Keep medicines out of the reach of children.** Parents should read labels carefully before giving medicines. Older children should never be allowed to give medicine to younger children.



\* **Keep bleaches, cleaners, waxes and household cleaning materials in locked cabinets or otherwise, out of the reach of children.** Products for cleaning or those containing poison should not be stored near food.

\* **Old drugs and medicines should be thrown away and destroyed when they are no longer used.** Children should never be given old medicine bottles to play with.

\* **Keep garages, barns and tool sheds safe for children.** Poison for rats may kill your children before the rats find it.

\* **Never store poisons in the medicine chest.**

## **Florida's Poison Control Centers**

Despite the best precautions of parents a child sometimes will ingest a toxic material.

What can a parent do? The best thing is to call the family physician and follow his instructions. If no physician is available, call the Poison Control Center nearest your home (see list included in this issue) and get the patient to the hospital as quickly as possible. Take the original container or bottle with you. Thirty-three of Florida's hospitals have Poison Control Centers connected with their emergency rooms — or in close proximity.

The Centers maintain files containing the trade names of products which have previously been involved in poisonings, the chemical ingredients, and the antidote or treatment for that particular poison. If the Center's files do not have the information, the physician or nurse on duty may know where it can be obtained.

Highly toxic pesticides, such as parathion, are those which are very poisonous to man — even in small amounts and even when they are diluted for use.

Concentrated pesticides are chemical compounds which must be diluted, usually by chemical plants, before they are sold to homeowners.

The handling of highly toxic and concentrated pesticides usually requires extra precautions, such as special protective clothing. Most commercially sold pesticides do not need such precautions, but the instructions on the package and bottle labels should be followed.



A household product stored in something besides its original container may cause a case of poisoning in your home.

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Should a physician contact a Poison Control Center and report that a child has swallowed D— cleaning compound, the attendant at the Center can tell the physician what chemicals are in the compound and what is recommended as an antidote. The physician can start treatment without delay and without going through long tests and inquiries to find out the nature of the poison.

### Poison Control Centers

Below are the Centers which were started under the sponsorship of the Florida Pediatric Society and the Florida Chapter of the American Academy of Pediatrics, and carried on with the cooperation of the participating hospitals, the State Board of Health, and County Health Departments. Also listed are the telephone numbers and addresses. Note the one nearest you.

#### APALACHICOLA

George E. Weems Memorial  
Hospital — 653-3311

#### BARTOW

Polk General Hospital  
533-1111  
2010 East Georgia Street

**BELLE GLADE**

Glades General Hospital  
996-6571  
State Road 80

**BRADENTON**

Manatee Memorial Hospital  
4-0391  
206 Second Street, East

**DAYTONA BEACH**

Halifax District Hospital  
255-4411  
Lakeshore Drive

**FORT LAUDERDALE**

Broward General Hospital  
525-5411  
1600 South Andrews Avenue

**FORT MYERS**

Lee Memorial Hospital  
Ed — 2-1141  
2776 Cleveland Avenue

**FORT WALTON BEACH**

Fort Walton Beach Hospital  
244-5154  
207 Hospital Drive

**GAINESVILLE**

Alachua General Hospital  
FR 2-4321  
912 S. W. 4th Avenue  
J. Hillis Miller Health  
Center — 376-3211  
University of Florida

**JACKSONVILLE**

St. Vincent's Hospital  
389-7751  
Barrs Street & St. Johns Ave.

**KEY WEST**

Monroe General Hospital  
294-3741  
Stock Island

**LAKELAND**

Lakeland General Hospital  
MU 6-1111  
Lakeland Hills Boulevard

**LEESBURG**

Leesburg General Hospital  
787-7222  
600 East Dixie

**MELBOURNE**

Brevard General Hospital  
723-2421  
945 Hickory Street

**MIAMI**

Jackson Memorial Hospital  
371-9611  
1700 N. W. 10th Avenue

**MIAMI BEACH**

Mt. Sinai Hospital  
JE 2-3611  
4300 Alton Road

**NAPLES**

Naples Community Hospital  
MI 9-3131  
350 Seventh Street, North

**OCALA**

Munroe Memorial Hospital  
629-7911  
1410 South Orange Street

**ORLANDO**

Orange Memorial Hospital  
241-2411  
1416 South Orange Avenue

**PANAMA CITY**

Memorial Hospital of Bay  
County — 5-7411  
600 North MacArthur Avenue

**PENSACOLA**

Baptist Hospital  
HE 2-1241  
1000 West Moreno Street

**PLANT CITY**

South Florida Baptist  
Hospital — 752-1188  
Alexander Street

**POMPANO BEACH**

North District Hospital  
WH 1-8300  
201 Sample Road

**PUNTA GORDA**

Medical Center Hospital  
NE 2-2191  
109 East Marion Avenue

**ROCKLEDGE**

Wuesthoff Memorial Hospital  
363-2211  
110 Longwood Avenue

**ST. PETERSBURG**

Mound Park Hospital  
894-1161  
701 - 6th Street, South

**SARASOTA**

Memorial Hospital  
955-1111  
1901 Arlington Avenue

**TALLAHASSEE**

Tallahassee Memorial  
Hospital — 877-2181  
Magnolia & Miccosukee Roads

**TAMPA**

Tampa General Hospital  
253-0711  
Davis Islands

**TITUSVILLE**

Jess Parrish Memorial  
Hospital — 267-1331  
U. S. No. 1, North

**WEST PALM BEACH**

Good Samaritan Hospital  
833-1741  
1300 North Dixie Highway

**WINTER HAVEN**

Winter Haven Hospital  
293-1121  
200 Avenue F, North East

**Pesticides in Agriculture**

The use of pesticides is not new. The ancient Greeks used brimstone (sulphur) as an insecticide. Common salt was probably used since early days as the first chemical weed killer. The settlers in the Great Plains of the United States in 1869 prevented their own starvation by using Paris green, a crude arsenical, to save their potato crops from Colorado potato beetles. Early American farmers treated their seed grain with copper sulfate to protect their crops from plant diseases.

The development of modern pesticides since 1945, together with technical advances, has made American agriculture specially efficient. During the past two decades, farm output per acre has

increased by at least a third, keeping pace with the needs of an exploding population at home and growing foreign markets.

In recent years pesticides have become a common tool of progressive farmers. Nearly \$1 billion worth of pesticides are used every year to produce and protect agricultural and forest products. In one South Florida county, more than 491,000 pounds of DDT, 281,000 pounds of parathion, and 21,000 pounds of malathion were used recently by agricultural interests in one year.

Of the 457 million acres of farmlands in the United States, the U. S. Department of Agriculture estimates that 15 per cent, or 69 million acres, produce crops which need some degree of protection from insect pests. All grain and cotton seed require chemical treatment for prevention of plant disease. Pesticides are generally the most effective and, in many instances, the only weapon available to fight pests that damage or destroy crops, livestock and forests, or endanger human health and our natural resources.

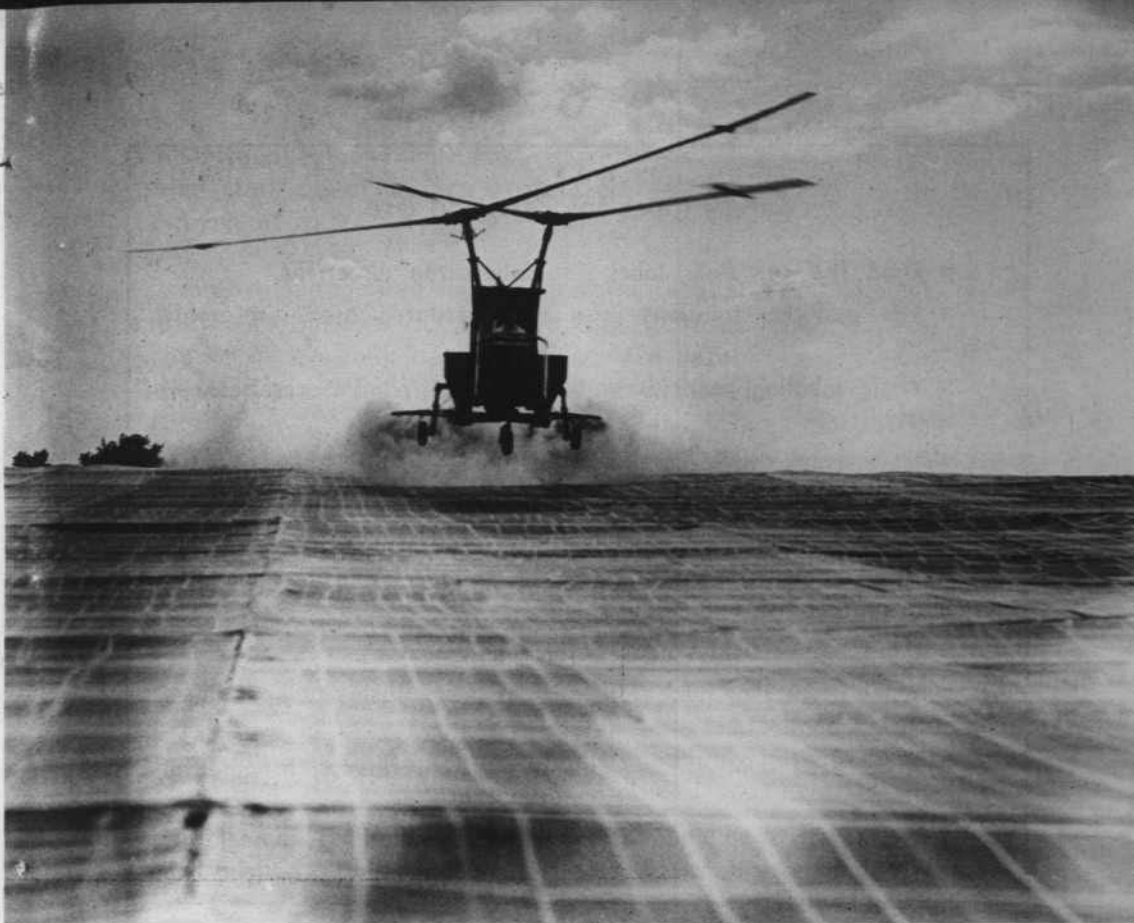
Not only do farmers use insecticides to control insects but chemicals are applied nationwide to control weeds on more than 70 million acres of agricultural lands annually at a cost of more than \$272 million. Principal applications are to about 25 million acres of corn, six million acres of cotton, three million acres of soybeans, 20 million acres of small grain, and seven million acres of pasture and rangelands.

## **Pesticides in the Home and Garden**

But pesticides are used not only in agriculture. The U. S. Department of Agriculture says that approximately 15 per cent of all pesticides are purchased for home and garden use. In one year, this has totaled over 50 million pounds of insecticide preparations. By controlling destructive or disease-carrying pests, these chemicals help make possible our modern way of life.

The aerosol bomb, now a commonplace method of dispensing insecticides in the home, was invented during World War Two by U. S. Department of Agricultural scientists. Millions of these aerosol "bug bombs" are sold every year for use against common home pests such as flies, mosquitoes, roaches and ants for protection of flowers and ornamental plants.





Pesticides have become a common tool of the progressive farmer. One unique way of applying pesticides to a crop is by helicopter.

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## The Consumer and Pesticides

The effectiveness of modern pesticides in controlling agricultural pests helps keep food costs down and quality high. It is estimated that if pesticides were to be completely withdrawn from farm use, crops and livestock production would drop in the United States by 25 to 30 per cent.

This sharp cut in production could boost the price of farm products by 50 to 75 per cent and increase the food's share of the family budget from less than one-fifth at present to as much as one-third. Without pesticides, potato production would be virtually wiped out by disease in the Eastern United States. Peaches would disappear from the market. Citrus would be destroyed in

## Safety Rules for Pesticide Use

- Read the container label . . . follow the directions.
- Mix pesticide solutions in a well-ventilated area, preferably outdoors.
- Avoid inhaling pesticide sprays or dust. Wear a respirator if necessary.
- Never smoke while handling pesticides.
- When using a pesticide outdoors, apply when there is little or no wind. . . . to minimize drifting of the spray or dust.
- Avoid chemical contamination of streams, lakes or ponds in order to protect fish and wildlife.
- Don't use pesticides near water supply sources.
- When protecting food crops against pests, observe proper times and rates of application.
- Keep weed control chemicals away from flowers, ornamental shrubs and other valuable plants.
- Wash with soap and water and change clothing immediately if you spill a pesticide on skin or clothing. Shower or bathe when completing spraying job.
- If a pesticide is swallowed accidentally, call a physician at once.
- Store pesticides in closed, well-labeled containers, where children and pets cannot reach them. Do not place near food, feed or seed.

Florida groves and would disappear almost completely from the nation's tables.

During World War Two, production of sweet corn in the United States was greatly reduced because of destructive European corn borers and corn earworms. In 1946 blight destroyed over 50 per cent of the tomato crop in 10 states. These foods were restored to full production through modern pesticide protection.

## Pesticide Registration

In order to protect the population, every commercial pesticide sold in interstate commerce must be registered with the U. S.

Department of Agriculture. Florida has similar laws which require that pesticides be registered with the State Department of Agriculture.

Before being sold on the market, every pesticide must meet rigid tests, proving its claimed effectiveness against a particular pest or pests and demonstrating its safety to humans, crops, livestock and wildlife when used as directed.

A pesticide manufacturer often must take as much as three to five years of exacting scientific research to obtain proof acceptable to the U. S. Department of Agriculture of the safety and effectiveness of a single new pest control chemical. In addition, the Department itself conducts intensive research on pesticides to assure that the method of use are effective and safe.

In the past 25 years since the development of DDT and other pest control chemicals, over 60,000 pesticide formulas, based on more than 500 individual chemical compounds, have been registered with the U. S. Department of Agriculture. Chemical companies are continually looking for the "ideal" pesticide that will swiftly kill insects or weeds at a low cost and still be safe for humans.

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A chemical plant's warehouse is piled high with pesticide concentrates. Workmen are urged to take showers after mixing or handling pesticides.



When application is made for a pesticide registration, the manufacturer must show how much residue the pesticide leaves on crops and livestock at marketing time. The U. S. Department of Health, Education, and Welfare then sets a tolerance limit. This tolerance is a definite number of parts by weight of the pesticide in relation to parts per million of food that is permitted in or on an agricultural commodity. The Federal Food and Drug Administration is responsible for enforcing the tolerances by testing and preventing products with illegal residues from being shipped in interstate or foreign commerce.

According to the rules of the State Department of Agriculture, no pesticide can be recommended for use on food or feed crops in Florida unless the U. S. Department of Health, Education, and Welfare has established a tolerance or exempts it from the need of a tolerance.

## **Proper Labeling**

Both Florida and federal regulations require that pesticide labels be designed to protect both the user of the pesticide and persons who may be exposed. Federal law insists that when needed, key warnings and cautionary statements be displayed on the front panel of pesticide labels.

Florida's State Department of Agriculture regulations state that labels for a general pesticide must bear warnings or cautions which are necessary for the protection of the public, including the words "Keep out of the reach of children," and "DANGER, WARNING, or CAUTION."

Highly toxic materials must also carry the word "POISON" in red on a contrasting background in proximity to the traditional skull and crossbones. The label also must include the antidote and a statement to call a physician in case of poisoning.

## **Major Types of Pesticides**

There are two major types of pesticides available on the market today — chlorinated hydrocarbons, such as DDT; and organic

phosphates, such as parathion. There are many other types of pesticides and an itemized list of the categories fills a book several inches thick.

Some chlorinated hydrocarbons can be absorbed through the skin, in addition to being taken in through the mouth or by breathing dust, spray mist or vapor. These compounds are stored in the body's fat tissues and such storage may result from either

### **Emergency Help for Poisonings**

The following steps should be taken if a member of your family is poisoned:

**Call your physician immediately**

**Tell the physician the brand name of the poison that has been taken**

**Do what your physician tells you to do**

**If you cannot locate a physician, call your city, county or state police or take the patient to the nearest Poison Control Center or the emergency room of the nearest hospital.**

#### **WHILE WAITING FOR HELP**

**Make the patient vomit up the poison, EXCEPT**

**when he is unconscious or in a comma;**

**if the victim is having convulsions;**

**if the victim has swallowed petroleum products (gasoline, kerosene, lighter fluid); or**

**if the victim has swallowed a corrosive poison (toilet bowl cleaner, rust remover, drain cleaner, washing soda, ammonia water, household bleach).**

**Keep the victim from being chilled. Wrap in blankets or use hot water bottles.**

**Do not use alcohol in any form.**

**When vomiting begins, place victim with head lower than hips and face down. (This keeps poison from getting into the lungs and doing further damage.)**





Sacks of pesticides are stacked in a field ready for use. To avoid contaminating the environment the empty containers should be properly destroyed.

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a large, single dose or repeated small doses. However, these chemicals are eliminated very gradually by the body when further exposure is discontinued.

Early symptoms of chlorinated hydrocarbon poisoning are headaches, nausea, vomiting and dizziness. Advanced symptoms include prostration and convulsion, followed by coma and death.

**Organic phosphates** can be taken into the body through the mouth or by breathing the vapor or spray mist. However, absorption through the skin is the most frequent route of poisoning. Some pesticides, such as TEPP, parathion or phosdrin concentrate on the skin can be fatal. About three drops of 80 per cent parathion, if dropped on an unbroken skin, is sufficient to kill a 150-pound man. Yet hundreds of thousands of pounds of this pesticide are used each year in Florida.

## **Pesticides and Health**

The primary purpose of the State Board of Health is to protect the health of the people of Florida and their visitors. It is keenly aware of the vast economical benefits that are gained from pesticides and of their substantial contribution to an abundance of nutritious foods and useful fibres and to the control of human disease vectors.

Since the first synthetic pesticide, DDT, was introduced in 1945, the amount of pesticide chemicals in use in the United States has increased. Within the past two decades the use of pesticides has increased from a few million pounds annually to nearly one billion pounds. The users of pesticides have multiplied to include crops, pasturelands, forests, groves, homes, gardens, lawns and many other uses.

The State Board of Health and County Departments' mosquito control programs are areas where pesticides control disease carriers and make the state inhabitable. However, environmental contamination resulting from the massive dispersal of pesticides may represent a potential hazard. This problem requires expanding research efforts, including surveillance of that segment of the population which is in close contact with pesticides to assure that these chemicals are safe for humans to use.

The problem is how to kill pests without endangering man. This is made more complex by the presistence of some pesticides in the environment. Although pesticides may be present in the



The cleaning of equipment should be done properly to avoid contaminating the environment. In one case a worker flushed out a tank with water from a roadside ditch . . .

environment in small amounts, they have the potential for causing undesirable changes in biological systems and may eventually have a detrimental effect on human health. Therefore, there is a continuing need to examine the residual of pesticides in the biological environment and to find out if pesticides are detectable in many foods, in clothing, in man and animals.

## Pesticide Studies

State, county and federal health agencies have always been interested in the effects of pesticides on the community and especially on agricultural workers, pest control operators, airplane pilots who dust crops, and workers in chemical plants who work with the concentrated pesticides. Interest in pesticides was heightened by the publication of **Silent Spring** by Rachel Carson and other books about the effects of toxic materials in the environment. The main effect of these books was to demonstrate how little was known about pesticides and their relationship to man and his world.

The Florida Community Studies on Pesticides — Dade County was established in 1963 by the State Board of Health and the Dade County Department of Public Health, in cooperation with the

... which killed fish in a nearby stream.



University of Miami. The Federal Government also established the Pesticide Research Laboratory at Perrine to provide research for the federal program. There is close cooperation between the state and federal agencies.

Dade County was chosen as the site of the studies because of the wide use of chemicals to control pests in the fields and the year-around agricultural activities. Also, there were many incidents in the county of human intoxications from pesticides. A few were intentional but many were of occupational or accidental origin.

## **The Purposes of the Studies**

The Community Studies on Pesticides is composed of a team which includes physicians, epidemiologists, sanitarians, chemists and statisticians, and has three main areas of interest.

### **\* Active Poisonings**

The team is interested in the "who, why and how" of poisoning incidents and checks out every discovered case. It has found that parathion is the most deadly pesticide and accounts for 60 per cent of all poisonings. In adults, the causes are occupational and accidental ingestion, suicide and homicide. With children, the poison-

from these highly-exposed workers have given the team opportunities to understand the effects of pesticides on this group as compared with other people of the community.

Chemical examinations (cholinesterase inhibition and urinary metabolites) carried out in the laboratory have found about five per cent of the exposed workers to be excessively exposed to highly toxic materials. Many illnesses may have been avoided by suggestions that these affected workers be transferred for a time to other areas of work where they are not in contact with the chemicals.

The team also investigates crashes of crop dusting planes in southeastern United States to determine if the pilots were intoxicated (poisoned) by the pesticides.

As a side effect of the team's work, an industrial hygiene program has improved the understanding of workers and spraymen in the safe handling of pesticides. Workers now are less likely to doff their safety clothing, more readily to take showers after working with chemicals, and have learned to take precautions with dust, spillage, and washing equipment.

#### **\* Study of the General Population**

In the past the amount of research on the residual of pesticides in the general population has been limited. In the United States data released were based upon a study which incorporated 250 tissue samples. In England, data were based upon 100 tissue samples; in India on 70 to 90 samples.

One of the goals of the Community Studies on Pesticides was to determine the level of pesticide in the general population of Dade County. The study has concentrated on DDT, which has been in use in the United States for more than 20 years, and DDE, one of its metabolites. The prevalence of Dieldrin, another stored chlorinated hydrocarbon pesticide has also been studied.

Samples of tissues from 159 persons of all ages, races and sex who had been accidentally or violently killed in the county between 1965-67 were tested. Laboratory tests show that there was a higher residue of DDT in the tissue of the lower socio-



ings are usually accidental. Investigations have shown that the most frequently poisoned child is a nonwhite male about 2½ years of age.

The number of cases of child poisoning is high because sometimes parents bring back the pesticide from the fields without realizing that the chemical is dangerous. Also, illicit peddlers have been known to sell parathion as roach poison. Mothers will scatter this around the home, sometimes in liberal amounts, and a toddler child does not know not to eat anything lying around.

A physician from the State Board of Health's Community Studies on Pesticides—Dade County takes a blood specimen from a worker who is regularly exposed to highly toxic pesticides.



#### \* The Occupational Exposed

The Community Studies' team also investigates the health of selected groups of workers who are most heavily exposed to concentrated pesticides on a continuing basis. These include formulators in chemical plants, field workers, pilots of dusting planes, lawn spraymen and pest control operators. Blood specimens drawn



Blood and urine specimens are tested in these laboratory machines of the Community Studies on Pesticides — Dade County.

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economic group, particularly in males, than in other groups. The same data and racial differences were found in blood specimens as well as in the tissue.

There was also little to show through the Community Studies that pesticides remaining in foods have much effect on the elevated tissue residues of DDT when found in members of the general population. Additional studies carried on in other countries of the temperate zone, particularly Canada and Western Europe, indicated that there is less pesticide residual in the population of those countries. Information from the Community Studies tend to show that there is a higher level of pesticide residual in the tropics because of the wider use of pesticides in the environment.

## Know How to Use Pesticides

Toxic pesticides have a definite place in the Florida scene. We need them to control insects, weeds, fungus and rodents. However, pesticides need to be closely guarded and wisely used.

Handling highly toxic materials allows no margin for error and requires strict adherence to safety precautions. Protective

clothing should be worn when handling and applying highly toxic or concentrated pesticides. The clothing should consist of rubber or neoprene gloves, water repellent shoes, coveralls, a hat and a respirator that has been approved for the chemicals being used.

A shower should be taken after working with pesticides and necessary precautions should be ready should highly concentrated materials be spilled on the body. All pesticides, including those for the home and garden, should be kept in a locked closet or cupboard and empty containers should be disposed of by proper methods. Metal drums, containers and cans should be thoroughly rinsed and sold as scrap metal. Sacks, rags and paper material should be carefully burned and buried at least 18 inches deep in the ground.

### WHAT TO DO ———

#### **If the victim has inhaled the poison**

Carry him to fresh air immediately. Open windows and doors. Loosen clothing; apply artificial respiration, if breathing is stopped or becomes irregular.

Prevent chilling. Do not give alcohol in any form.

#### **If the victim's skin has been contaminated**

Drench skin with water from shower, hose or faucet.

Apply stream of water on skin while removing clothing.

Cleanse skin thoroughly with water. Rapidity in washing is most important in reducing extent of injury.

#### **If the victim's eyes have been contaminated**

Hold eyelids open, wash eyes with gentle stream of running water immediately. Delay of a few seconds may extend injury. Continue washing until the physician arrives.

Use nothing but water. Chemical eyewashes may increase the extent of the injury.

#### **If the victim has been burned by chemicals**

Wash with large quantities of running water.

Immediately cover with loosely applied clean cloth.

Do not use ointments, greases, powders or other drugs in treatment of chemical burns.

Keep victim flat and keep him warm until medical help arrives.

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Anyone who uses pesticides should know the limitations and dangers of the chemicals. Highly toxic materials should never be used in or around the home or where children or animals can get to them. Pesticides should be purchased only from a knowledgeable, reliable dealer in pesticides. Many such dealers refuse to handle or sell the more highly toxic pesticides, such as parathion.

The safe way to use pesticides — of any kind — is to read the instructions and use the material as directed. Store them where children cannot get to them, and dispose of the containers in the prescribed manner.

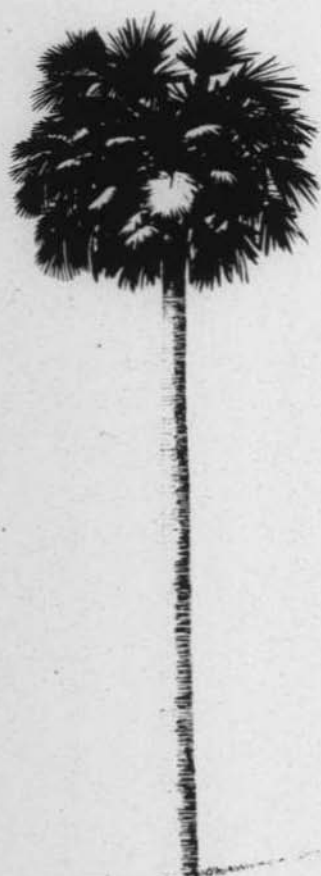
A pest control operator demonstrates the proper attire for using highly toxic pesticides. It includes coveralls water-tight boots, neoprene or rubber gloves and a respirator.





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# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 2 *The Tragic  
Story of Cancer*

FEBRUARY

1969

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(Cover photo) Lung cancer kills from 40,000 to 50,000 persons in the United States each year. Cigarette smoking contributes heavily to the death rate for lung cancer.

A physician reads X rays of lung cancers in a Florida tumor clinic. Over 33,000 patient visits were made to the 26 tumor clinics during 1967.

# The Tragic Story of CANCER

"She's made a marvelous recovery."

"Doesn't she look well?"

"You'd never know she had . . . it!"

The three ladies at the bridge table waxed eloquently about the fortunes of Mrs. James who had recovered from a serious illness. But the fourth woman at the table looked at them with sorrow.

"But have you heard about Mrs. Roberts over on Fourth Street? I hear she's dying . . ."

The woman pursed her lips and raised her eyebrows heavenward. The other three ladies leaned over the card table in concern.

"But what's the trouble with her?"

"They aren't saying, and **you** know what **that** means . . ."

A kind of horror spread through the group and the four bridge players assumed attitudes of suffering . . . as they went on with their bridge game.

"Mrs. James went to the doctor in time . . . but . . . poor Mrs. Roberts . . . she had cancer . . . and they didn't find it soon enough."

The conversation changed but the stories of Mrs. James and Mrs. Roberts continue throughout the land. Incidents similar to that of Mrs. Roberts are frequent. Cancer has claimed many victims because people refuse to face up to it. The four middle-aged women were thinking, "It is unpleasant. We'll talk about it tomorrow. Don't face it." Yet they seemed to know that they were in the age group (30-54) where cancer takes its biggest toll among women. They admitted that the main hope of cure was early detection and treatment but they joined the conspiracy of silence which allows cancer to add other victims to its list.

But there is help for those who contract cancer. Many persons have added years to their lives because their diagnosis was made early and they received proper treatment.

The problem of cancer is widespread. Everyone knows someone who has suffered from the disease and wonders when a cure or prevention for the disease will be found. It must be remembered that cancer is a family of diseases and cures most likely will be found over a span of time, according to type. Cures of some types, such as leukemia, still lie in the realm of research. Other types of cancer, such as of the uterus and lungs, can now be prevented.

This issue of **Florida Health Notes** will tell you how cancer develops, and about the various types of cancer and the sites of the body where they are located. We, also, will tell you about the work of the tumor clinics, the Statistical Tabulating Center, and the Florida Cancer Council; about research and education; and about the "quacks" who prey upon people who are seeking a "cure" for cancer.

## More People Every Year

In spite of all that is being done, cancer is becoming a bigger problem every year.

In 1900, the average person could expect to live to be 49 years old. Tuberculosis was the leading cause of death. Heart disease was Number Three on the list and cancer was Number Seven.

Now that the average infant at birth can expect to live to the ripe old age of 70, heart disease has moved up to the leading cause of death and cancer is second—and it has been second in Florida for 25 years.

Over 11,100 persons died of malignant neoplasms (cancer) in 1967 in Florida. Like heart disease it is primarily a disease that

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### FLORIDA HEALTH NOTES

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FEBRUARY 1969



strikes middle-age and older people. This doesn't mean that younger people don't die of cancer. They do. But the death rate rises sharply after the age of 45. Florida has a special problem in that it has a higher ratio of elderly people than most states. It is in this group that cancer is most prevalent or most often discovered.

Whom does cancer hit hardest—men or women? At what ages are people most likely to be affected? The race is close but records show that more women than men die of cancer in the age group of 30 to 55 years. But more elderly men than women die of the disease. About 17 per cent of all women's deaths are attributable to cancer, about 14 per cent of all men's.

Many people are like the bridge players—they know people who have cancer yet they join the conspiracy of silence. More people every day are becoming aware of the importance of the disease. Much that has been learned about cancer is not particularly encouraging. Despite the millions of dollars spent in research, science has not yet found ways to curb many types of cancer—and the number of deaths is increasing.

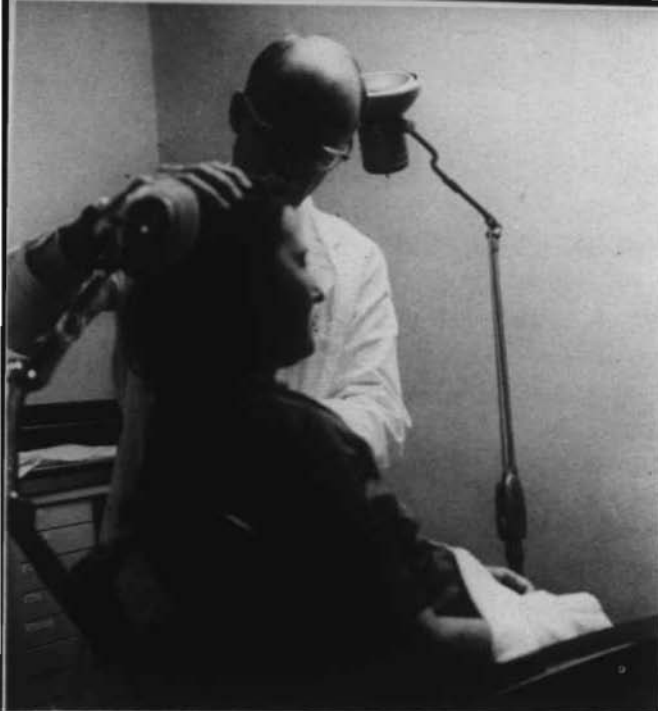
Despite these seemingly discouraging factors, more can be done to detect and even cure many cancers through the present means of diagnosis and treatment. The key lies in prevention and/or early detection. Toward this end the individual can at least help himself. Special attention must be given any ache, pain, sore or other bodily disorder that persists for a week or longer.

## **The Traitor Within**

Cancer is described as a lawless traitor who arises from within and strikes out at the healthy community around him. Although some scientists think it may be caused by a virus, it does not seem to be the usual kind of communicable disease, caught from somebody or something else and coming into the body as a germ.

It is not limited only to humans. Plants, insects, fish and fowl, reptiles and mammals have one thing in common. They are made up of cells and this is where the traitor is found.

Cancer is the uncontrolled growth of cells. The human body is a well-organized society of cells. From the time a fertilized egg cell starts developing in a mother's womb there is a law of life



A physician examines a patient in one of Florida's tumor clinics.

that regulates growth. One cell splits into two cells, which in turn divide to make four cells. As this goes on, various types of tissues and organs, each with a definite shape and structure and use are formed. In nine months when the baby is born, its body is made up of over 200 billion cells. Even then they do not stop dividing. As the child grows the cells continue to divide.

When adult size is reached, nature puts "the brakes" on silently and the cells stop dividing except to patch up wounds and replace worn-out cells and keep the body in good repair. If nature fails to "put on the brakes," cells can go out of control and start dividing too rapidly and for no apparent purpose. Nobody is sure what causes this, although chronic irritation or inflammation appears to have something to do with it in many cases.

The rapidly growing abnormal cells are sufficiently different from normal cells to be recognizable under a microscope. Soon there is a clump of cells living at the expense of the body, crowding other tissues and organs out of space that rightfully belongs to them, taking the nourishment meant for other cells, and contributing nothing.

Sometimes these clumps of cells grow slowly and in a limited area. When they do not spread, they are called **benign tumors**. Most fatty tumors and all warts are benign. These tumors are

harmful only when they press against other organs and interfere with their work.

When the clump of cells has the capacity to invade surrounding tissues and to spread to other parts of the body, it is known as **malignant tumor** or cancer. The danger of cancer is that it doesn't stop growing. It not only infiltrates between normal cells but it destroys them.

Malignant tumors or cancers are of two general classes. Those that originate in the bones, muscles and other so-called "connective tissue" are called **sarcoma**. Those that arise in the epithelia (cover or lining) tissues are called **carcinoma**. Physicians speak of sarcoma of the muscle or bone, and carcinoma of the lip or breast. Since both classes are cancer, it is correct to speak of cancer of the bones or cancer of the breast. A **carcinogen** is a substance or agent which causes or excites cancer.

Sometimes the cancer spreads slowly. What usually happens is that living bits of the cancer break off and are carried through blood vessels and lymph channels to other parts of the body. This is called **metastasis**. Eventually these pieces lodge in a blood vessel or lymph node and there they start a secondary growth.

After extensive metastasis, which may take from a month to years—depending on the kind of cancer and where it started—the cancer cannot be cured by an operation. By this time, it is in vital organs and too widespread to be removed completely.

Sometimes the cancer grows to such a size that blood vessels cannot bring it enough nourishment and parts of it deteriorate and produce toxic effects. Then the patient may die of secondary infection. Or the cancer breaks through an artery and causes internal hemorrhage. It may interfere with some important body function, or obstruct some vital passageway.

## Why Does Cancer Pick on Some People?

Everyone would like to know why cancer strikes some people and lets others alone. The clues are scattered. It is like putting pieces of a jigsaw together that don't fit. You know it is the same puzzle because the design says "cancer."

Prolonged irritation would seem to have something to do with the development of many kinds of cancer. But the kinds of irri-



A technician in a pathologist's laboratory examines slides for cancerous cells.

tation involved in different kinds of cancer formation seem to vary. There is some evidence that physical injuries and some diseases of a chronic nature might predispose toward cancer. Physicians warn against subjecting moles and warts to constant irritation, such as rubbing belts, collars or razors. Dentists warn against jagged teeth and ill-fitting dental plates.

Prolonged exposure to the sun may produce some kinds of skin cancer. Sailors and farmers have more cancer on their face, neck and hands—the exposed parts of the body—than other people. White people who live in the southern part of the United States have more skin cancer than those who live in the North. Nonwhite people have less skin cancer than white-skinned people, probably because their skin is able to filter out more of the ultraviolet radiation of the sunlight.

Like the sun, X-ray radiation can cause skin cancer due to over exposure. Leukemia has been observed among radiologists who do not protect themselves while working with X-ray equipment. Uncontrolled radiation from radioactive elements, such as radium, is hazardous.

The action of certain chemicals was first noted as a cause of cancer in certain industries as early as 1775. Chimney sweeps of England were shown to have cancer of the skin. Something in the soot to which their bodies were constantly exposed brought about skin cancer.

Scientists have experimented with many of the by-products of petroleum, pitches, paraffins, asphalt, arsenic, just to name a few chemicals, and produced cancer on animals in laboratories.

## **Cigarettes and Lung Cancer**

At the beginning of the 20th Century, lung cancer was rarely found during autopsies. At the University of Minnesota, physicians and scientists found four cases of lung cancer in 3399 autopsies during the period of 1899 to 1918. From 1918 to 1921, nine cases of lung cancer were found in 1003 autopsies; a total of 264 lung cancer cases was found in 8332 autopsies performed between 1949 and 1952. Perhaps it is significant that since 1918 cigarette smoking has been widely practiced.

Today lung cancer rates have increased until the disease kills from 40,000 to 50,000 persons each year in the United States. About six of every seven victims are men.

In 1957, the U. S. Public Health Service issued an official statement emphasizing the fact that the association between heavy and prolonged cigarette smoking and cancer had been established statistically and beyond reasonable doubt.

The American Cancer Society studied the smoking habits of some 188,000 men between the ages of 50 and 70 years. The study revealed that:

### **Six Sites of Cancer and Prevention**

The breasts, colon-rectum, lung, oral cavity, skin and uterus add up to about 60 per cent of all cancer cases, and about 48 per cent of the deaths due to cancer. Most of these deaths can be prevented by monthly self-examination of the breasts by all women; proctoscopic examination as part of the routine check-up for those over 40 years of age; reduction and discontinuance of smoking; early detection of mouth lesions; avoidance of excessive exposure to the sun, and Pap tests for all women.



\* The lung cancer death rate was more than three times as high for those who smoked two or three or more packs of cigarettes a day as for those who smoked less than one pack a day.

\* Lung cancer death rates are high among cigarette smokers and very low among nonsmokers—in both rural and urban areas.

\* Lung cancer is a rare disease among men who never have smoked.

\* Cancer of the lung is an important cause of death among men smoking two or more packs of cigarettes a day.

\* Men who once smoked cigarettes regularly but who no longer smoke had a lung cancer death rate about half as high as the rate for men who continued to smoke regularly at the rate of less than half-pack a day.

\* Pipe and cigar smoking appeared to be much less frequently associated with lung cancer.

A study group organized by several national cancer and heart organizations discovered that on a lifetime basis, one of every 10 men who smoke more than two packs of cigarettes a day will die of cancer. The comparable risk among nonsmokers was estimated at one out of 275 men.

More than 270 distinguishable chemical compounds have been identified in cigarette smoke. Of these, at least 15 are known to be carcinogens (cause cancer), either on experimental animals or in observations on humans exposed to the chemicals.

While smoking is a leading contributing factor to lung cancer, air pollution and viruses may also play a part in the disease. But there is need for more research in these areas.

## **Other Sites of Cancer in the Body**

The lungs and respiratory system and skin are just two of the major cancer sites in the human body. Others are the breasts, genital organs, gastro-intestinal system, urinary organs, brain and central nervous system, mouth and throat, bones and lymphatic system. One form of cancer which particularly strikes children is leukemia.

## **Cancer of the Breast**

In the United States, breast cancer occurs more often (64,000 cases a year) and causes more deaths (27,000 estimated in 1967)



White rats are used in research in many types of cancer. Scientists also use them to study side effects of drugs used in the treatment of cancer.

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than any other form of cancer in women. Many cases are arrested or cured because proper treatment is sought and given promptly.

The causes of breast cancer are not known. Some patients, when examined, recall having suffered a blow to the breast and suspect that this is related to the development of a breast tumor. However, a single injury has never been proven to produce cancer.

Breast cancer is one of the easiest to find and diagnosis. Ninety-five per cent of breast cancers are found by the women who have them. However, not all women find their cancer soon enough. If a woman discovers a lump in her breast, she should see a physician right away. Only a physician can decide whether a lump or dimpling requires further examination, such as a biopsy (a microscopic study of a small sample of suspicious tissue).

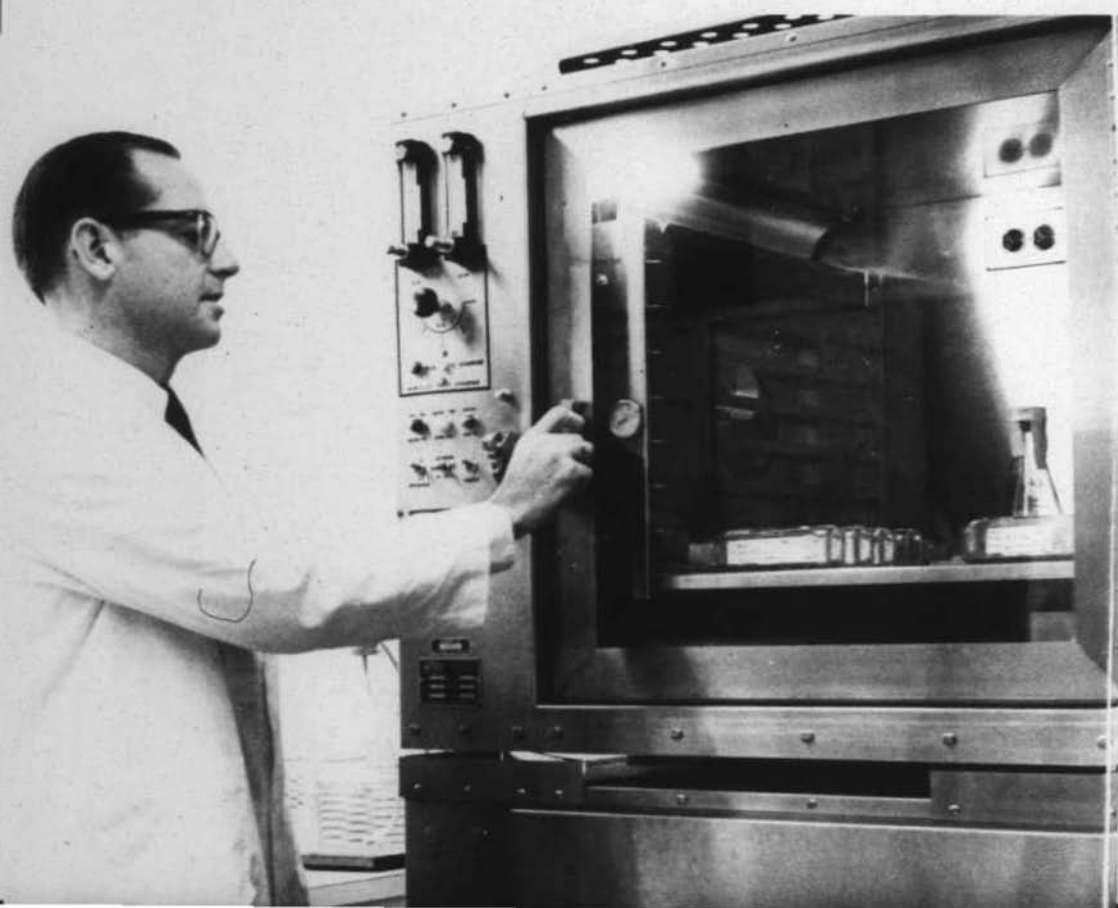
## Cancer of the Uterus (womb)

The second leading cause of cancer death in women is cancer of the uterus. It occurs four to five times oftener in the cervix, or neck, of the womb as it does in the body of the uterus. Women who have had multiple marriages, were married at an early age, started their sex life early, had extra marital relations, were prostitutes, or had many children close together are especially susceptible to cervical cancer. Mothers, who are needed by their families, are frequently the victims of this disease.

The detecting of uterine cancer is available to every woman of Florida through her private physician or to the indigent woman through the County Health Department clinics. The cell examination test, known as the "Pap" (Papanicolaou after the discoverer) or vaginal smear, is a simple painless procedure wherein a speci-

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Cancer cells are grown in this incubator in a research laboratory at the University of Florida.



It is possible to find breast tumors, both cancerous and noncancerous, by touch. Every woman should examine her own breasts carefully each month, and have an annual physical checkup, including examination of the breasts by her physician. In some instances special X-ray examination of the breasts may be helpful in locating or identifying a lump in the breast. Your family physician will instruct you how to examine your breasts.

man of cervical scraping is made. The specimen is placed on a glass slide and examined under a microscope in a laboratory.

There is an active and growing cervical cytology program in progress in which the high risk, low socioeconomic income group can receive Pap smears through the County Health Departments. This program is supported by the local health department, the American Cancer Society, Florida Division, and the State Board of Health. There is now a rather marked decrease in mortality rate from cancer of the cervix due to this life-saving program.

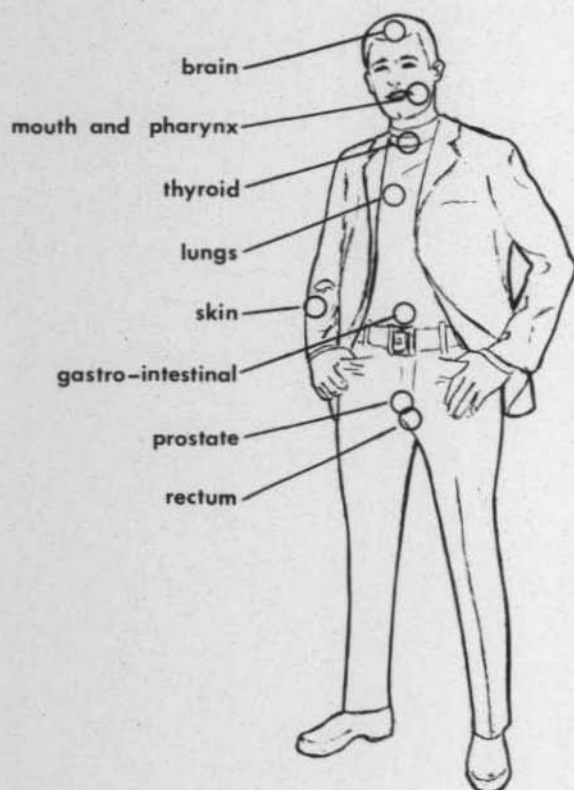
A total of 86,788 Pap smears was made from 1963 to 1967 under the Cervical Cytology Program. Of these women examined, 2911 had suspicious or positive smears and were referred to tumor clinics for diagnosis, treatment and follow-up. Currently 54 County Health Departments are participating in the program. In the near future—with funds and personnel permitting—all counties in Florida will be in the program.

Every woman over the age of 20 years, married or unmarried, should have a uterine cancer cell test every year. The test is a short, simple procedure that causes little or no sensation or discomfort.

## **Cancer of the prostate**

One of the leading sites of cancer in men is cancer of the prostate. This is a male genital gland lying just below the urinary bladder. The prostate provides part of the fluid for male procreative activity, and has other functions which are not fully understood. The most common tumor of the prostate is called the

## Major Sites of Cancer in MEN



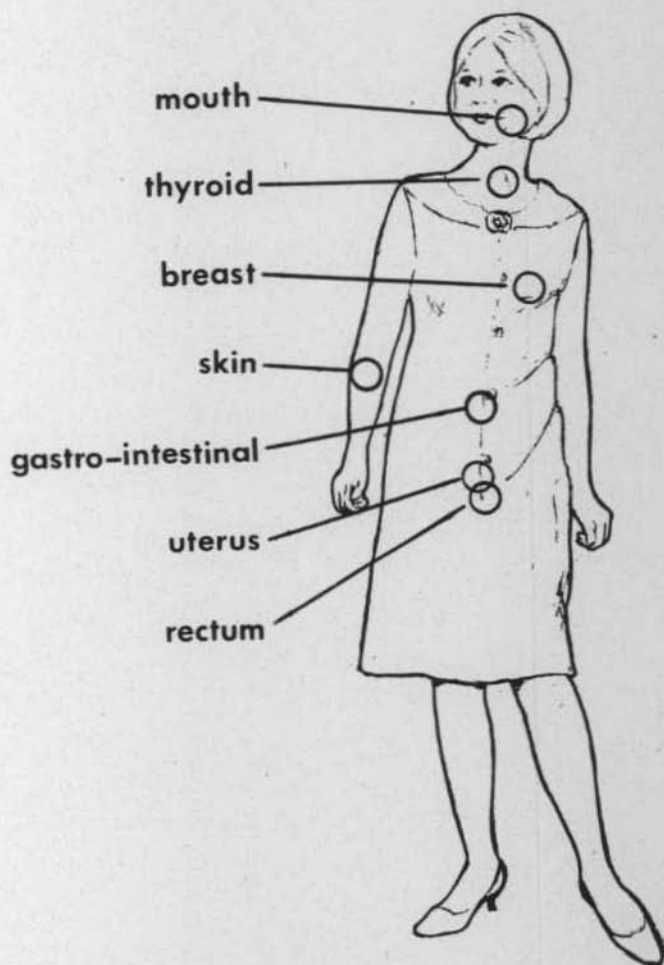
Many types of cancer, such as cancer of the breasts, colon-rectum, lung, skin, mouth and uterus, can be detected in their early stages through regularly scheduled physical examinations.

benign prostatic hypertrophy, more commonly known as enlargement of the prostate. This condition occurs in more than half of the men in the United States over the age of 50. Sometimes this enlargement of the prostate obstructs the urethra and interferes with the urination so that it becomes impossible to empty the bladder properly.



Cancer of the prostate is one of the most common forms of cancer in men. It causes few deaths in men under 40, but after the age of 55, it becomes the third highest cause of male cancer deaths, and after age 75, the leading cause of cancer death among men.

## Major Sites of Cancer in WOMEN



Other types of cancer, such as cancer of the brain, cannot be so easily detected. More people could be saved from the tragedy of cancer if they would have regularly scheduled examinations.

Every adult male should have a prostate examination once a year as part of his physical checkup. Since both prostatic enlargement and prostatic cancer are common, they may occur at the same time in the same man. When an enlarged prostate is removed, a biopsy is made of the tissue and studied for cancer growth.

## **Cancer of the Colon and Rectum**

Cancer of the colon and rectum is one form of cancer which occurs in both men and women. Patients with cancer of the colon and rectum can be saved in almost 75 per cent of the cases when the disease is found early and treated promptly and properly. Yet, the actual survival rate is only about 40 per cent.

Cancer of the colon and rectum is often called "the cancer nobody talks about." There is a widespread lack of information about the disease and a tendency to avoid diagnosis and treatment. Not enough people have regular health checkups which include proctoscopic examination (visual examination of the lower colon and rectum through a lighted tube). By such examination, the physician can detect early cancer when they are most curable.

All cancers are tumors, but not all tumors are cancers. A benign tumor occurring in the colon or rectum is known as a polyp. It should be removed because it is not possible to distinguish a benign polyp from a cancer, except by microscopic examination. Most colon cancer occurs within the last segment of the bowels. If these cancers are detected by proctoscopy, they can often be cured by simple means, such as an operation. If detected later, more radical surgery may be required and cure more difficult to obtain.

## **Lymphomas**

Lymphomas are cancers that differ from what is thought of as "tumors." They do not seem to originate in a given site or a particular organ and from there metastasize to other locations. Instead, they seem to involve an entire system or scattered parts of it—such as the blood making tissues—although signs of the actual disease may not show up in the system at all.

Lymphomas tend to occur in younger people, usually under 50, whereas other types of cancer usually develop after middle age.

It is the least understood of the entire family of cancer. The lymphomas includes a confusing variety of forms, shading from relatively benign and curable to completely obstreperous and uncontrollable cancer. It often spreads from one site to another in an unaccountable fashion.

## Hodgkin's Disease

Hodgkin's disease is a type of malignant lymphoma that is among the rarer forms of cancer, but it is of special interest because it affects chiefly those between the ages of 20 and 30. It is about twice as frequent in males as in females. Hodgkin's disease resembles the tumor family. It is not self-limiting but spreads to many parts of the body, usually progressing to a fatal end, though it may last for years with long intervals of apparent rest.

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Cobalt and other radioactive materials are used in the treatment of cancer.



## Leukemia

Leukemia, the leading type of cancer in children, is cancer of the blood-forming tissues of the body. It is also striking adults at an increasing rate. Like other forms of cancer, it is characterized by abnormal cell growth. With leukemia there is an over-production of white blood cells which fail to mature and do their disease-fighting job.

These abnormal cells infiltrate other organs and tissues of the body. The patient becomes anemic. His blood does not clot properly, and he is unable to fight off infection. He is subject to hemorrhages and to damage of his vital organs. Acute leukemia, which is more common in children under 15 years of age than in adults, gives a short survival period and therefore is more tragic than chronic leukemia.

The disease of leukemia is on the increase. The mortality rate has jumped 50 per cent in the past 20 years. Radiation and some chemicals are thought to cause leukemia in humans and viruses cause the disease in some animals.

Treatment of leukemia patients has made marked improvement in the past 15 years. The lives of many are now being prolonged for months, and even years, by the use of drugs and other therapy. The course of leukemia, once regarded as irreversible, has been slowed, and even halted for a time by chemicals and blood transfusions.

## Florida's Tumor Clinics

As previously stated, over 11,100 persons died of cancer in Florida in 1967. Many thousands of patients were seen in Florida's tumor clinics—a system developed over the years to provide cancer patients of the state with the best cancer diagnosis and treatment available.

The 26 tumor clinics are located in 19 counties which have 83 per cent of Florida's population. The hospitals in which the clinics are located have over 9900 beds, or about 37 per cent of the total bed capacity of Florida's hospitals. In 1967, there were 33,050

## Florida's Tumor Clinics

Following is the list of Florida hospitals where tumor clinics and registries are located:

### BRADENTON

Manatee Memorial Hospital

### DAYTONA BEACH

Halifax District Hospital

### FORT LAUDERDALE

Broward General Hospital

### FORT PIERCE

Fort Pierce Memorial Hospital

### GAINESVILLE

Alachua General Hospital

J. H. Miller Health Center

### HOLLYWOOD

Memorial Hospital

### JACKSONVILLE

Duval Medical Center

St. Vincent's Hospital

### LAKELAND

Lakeland General Hospital

### LEESBURG

Leesburg General Hospital

### MELBOURNE

Brevard Hospital

### MIAMI

Jackson Memorial Hospital

Mercy Hospital

Variety Children's Hospital

### MIAMI BEACH

Mount Sinai Hospital

St. Francis Hospital

### OCALA

Munroe Memorial Hospital

### ORLANDO

Orange Memorial Hospital

### PANAMA CITY

Bay Memorial Hospital

### PENSACOLA

Escambia General Hospital

### ST. PETERSBURG

Mound Park Hospital

### SARASOTA

Sarasota Memorial Hospital

### TAMPA

Tampa General Hospital

### TALLAHASSEE

Tallahassee Memorial Hospital

### WEST PALM BEACH

St. Mary's Hospital

tumor patient visits to these clinics. These diagnostic and treatment facilities are open to the patients of private physicians for consultation, as well as to the medically indigent cancer patient.

When a private physician or county health officer is suspicious of a cancerous condition in a patient, he can refer the patient to a tumor clinic for diagnosis and treatment. The treatment received by the patient is related to the facilities of the hospital. Some hospitals are not equipped to give some treatments, such



as cobalt therapy, and the patient is then referred to a larger clinic.

The State Board of Health provides consultative services to these clinics in administrative procedures, registry and any other non-medical problems which may arise. Frequently the State Board of Health and the American Cancer Society work side by side to support the cancer programs in authorized clinics. The Board also furnishes the tumor clinics with supplies for the registry and limited diagnostic money to cover such costs as X-rays and laboratory work for patients. The State Board of Health, through the County Health Departments, also provides about half of the ancillary staff members, such as secretaries and clerks.

The medical profession of the community provides the diagnostic services and treatment—many times without compensation. Sometimes the physicians receive reimbursements when the patients are under Medicare or Public Assistance Recipient Program.

The hospitals provide the facilities for the tumor clinics and absorb much of the expenses above what they receive under the indigent programs or Medicare.

A tumor clinic's clerk and secretary check the registry of cancer patients. These records are used for collecting information about patient care and follow-up, education and research.



The County Health Departments provide important back-up services related to indigent patients. Frequently they adjust their budgets to provide additional staff members for the clinics as they are needed. The public health nurses are largely responsible for follow-up services. In addition to necessary nursing care the physicians may prescribe, the public health nurses visit patients who have missed several appointments and who need to be persuaded to return for additional treatment.

## **Florida's Cancer Registries**

Connected as a part of each cancer control program is a cancer registry which is the active repository of information about cancer patients. Such registries contribute to the continuity of patient care. Because of the nature of cancer, the procedure used for patients' records follow the natural division of cancer: early diagnosis, definite treatment, and lifetime follow-up of the patient.

Physicians can use the registry to make decisions for patient management (treatment and care); for education (professional information on past experiences and how to handle individual patients); for research purposes; and for collecting information for analysis. Properly maintained and applied, the tumor registry can provide quality control for the care of the cancer patient.

The registry staff includes physicians, statisticians, secretaries and coding clerks. Presently 18 registries contribute to the Statistical Tabulating Center at the State Board of Health. Here some 35,000 case histories are on record.

## **Florida's Cancer Council**

Formed in 1951, the Florida Cancer Council was established to coordinate the cancer control work of the state. It is composed of representatives from the State Board of Health; American Cancer Society, Florida Division; Florida Medical Association; Florida Association of Tumor Clinic Directors; and the American College of Surgeons.



A State Board of Health consultant confers with the secretary of a tumor clinic on non-medical problems.

The goals of the Cancer Council are to prevent duplication and conflict of interest between its members and to more efficiently channel funds into coordinated statewide programs. The aim of the Council, in its endeavors to upgrade the care of the cancer patient, is to continually study existing programs and make recommendations for new projects for the education of physicians, nurses, paramedical persons and the public.

Final approval for tumor programs (including clinics), which are to be accepted by the American Cancer Society, Florida Division, and the State Board of Health, rests with the Council.

## The American Cancer Society

The American Cancer Society, Florida Division, plays a major and most important role in the cancer prevention program in Florida. It contributes financially directly to both tumor clinic operation and patient service when there are needs and all other avenue of resources are closed. The Society has provided special grants at various times to assist tumor clinics or to pay salaries

for needed staff members, and to support the cervical cytology program in certain counties of the state.

The Society provides needed patients with transportation to and from tumor clinics and with room and board while being treated as an outpatient when the clinic is distant from their homes. No cancer patient who is referred by a physician under this program is denied diagnosis or treatment because he is unable to travel to a distant clinic due to his lack of funds.

Loan closets in many counties provide patients with hospital beds, wheelchairs and other equipment which the patient's family may not be able to purchase. Volunteers from the community provide a dedicated staff of workers to local Cancer Societies in supplying bandages for the dressing programs.

## **Education, Research and Finance**

In addition to the service program carried on throughout the state, the American Cancer Society, Florida Division, has major educational programs for laymen and professional people. Films, pamphlets and exhibits are developed by the Society for educational purposes. Professional education is aimed at nurses, licensed practical nurses, physicians and cancer specialists.

The State Board of Health and the Florida Division conducts workshops for secretaries and clerks of tumor clinics to orientate them to their work, discuss problems, and bring them up to date with new information on cancer.

One of the cancer control program's aims is to hold tumor clinic-based conferences as a means of continuing education for physicians, hospital staff members and technicians. These conferences give the physicians, including those with private patients, the opportunity to present their problems to a board of selected specialists and receive recommendations toward the best course of treatment and care for their patients.

The cancer problem is being attacked vigorously on numerous fronts. Many millions of dollars are being expended throughout the United States on research of this multifaceted problem. Never before have so many well-trained professionals and lay people

devoted their energies to seek the solutions to the end of this Number Two killer of Floridians.

## The Cancer Quacks

While scientists are searching for an answer to the cancer problem, victims of the disease are looking for ways to solve their cases. They know that cures found in the future will not help them today. So, many cancer patients, while looking for ways to be "cured," fall prey to unscrupulous men and women who are not concerned about the heartache they create.

Victims of these quacks range from people who fancy they have an illness—and really do not—to those unfortunate people who are in the last stages of cancer and are looking for a "sure cure." The quacks range from those who have a limited understanding of cancer and believe they have a faultless cancer treatment to the dishonest quacks who are treating cancer for one purpose—to make money.

The modern cancer quack recognizes the respect that intelligent people have for honest medical practice and he frequently cashes in on this respect by using psuedo-medical language, counterfeit medical certificates and worthless machines. Sometimes treatments include the application of poultices, the drinking of ex-

Computers, such as this one at the University of Florida's J. Hillis Miller Medical Center, are used in cancer research.





A public health nurse makes follow-up visits to cancer patients when physicians request such services.



otically-named mixtures, or treatment by useless but fancy instruments or machines—none of which will cure cancer.

There is one thing that all quacks have in common, no matter how much education they have had, no matter how intelligent or honest they are; or no matter what their purpose—they disregard the rules of evidence. The scientific method does not exist in the mind of the quack. He objects to the judgment or scrutiny of those qualified to evaluate his claims. He goes directly to the public, which is seldom qualified to assess new methods of treating cancer, instead of going to the medical profession.

The most tragic part of the quack's work is that those persons who do have cancer in the early stages and still have time to be properly diagnosed and cured frequently lose precious time. Too often the quack deludes them into thinking that they are improved or cured until it is too late for the bonafide cancer specialist to help.

An intragency committee has been established in Florida to study unorthodox methods of cancer treatment and to act as a listening post for cancer quackery. Representatives on this committee are appointed by the State Board of Health, the Florida Medical Association, and the American Cancer Society, Florida Division. A recent survey of Florida physicians revealed a small amount of cancer quackery activity among the laity.

## Prevention is the Best Cure

Cancer creates family, economic, physical, social and psychological difficulties which may drag on for years. The emotional strain of cancer is exhausting.

But cancer need not prove fatal. It has proven increasingly curable—if it is found at the beginning. Public health workers are encouraged that, as a result of widespread educational campaigns and emphasis on periodic physical examinations, there appears to be a larger ratio of five-year survivals.

However, the number of survivals is yet far less than it could be if more cancer was diagnosed early and properly treated. This is the secret of Mrs. James—who survived cancer. People who have periodic physical checkups have more of a chance of early detection. Mrs. Roberts waited too late.

### Cancer's Danger Signals

If any of the following conditions occur for any length of time, see your physician to find out if this means cancer — or not:

- ° Unusual bleeding or discharge.
- ° A lump or thickening in the breast or elsewhere.
- ° A sore that does not heal.
- ° Persistent change in bowel or bladder habits.
- ° Persistent hoarseness or cough.
- ° Persistent indigestion or difficulty in swallowing.
- ° Change in wart or mole.

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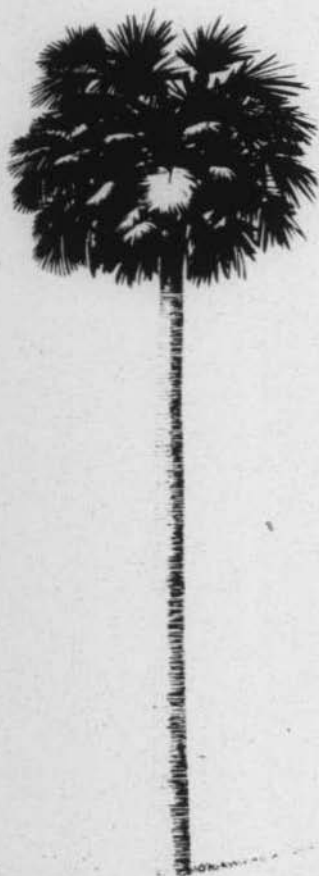
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# FLORIDA HEALTH NOTES



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## PARTNERSHIP

## in HEALTH

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(Cover photo) The partnership in health is an agreement between the State Board of Health and the cities and counties of the state to "cooperate" on public health programs for the benefit of the citizens of Florida.

The State Board of Health supplies many services to the County Health Departments. Included are laboratory examinations (above), and such data processing services as maintaining the payroll (below).



# **Partnership In Health**

Where would Floridians be without public health? Who would see that drinking water and food are safe? That births and deaths are recorded? That the public is protected against communicable diseases? That laboratory specimens are properly tested? That those who are ill are properly cared for?

From their beginning, the State Board of Health and County Health Departments have been concerned with such problems. The State Board of Health is the agency that coordinates public health programs carried out on the county level.

The 67 County Health Departments in Florida are a part of the state health agency. They are an important arm of the State Board of Health and look to the state agency for program policies, statewide public health regulations, consultation services, technical and administrative support, special services, such as X-ray materials and biologicals, plus financial support.

Disease knows no political boundaries. Pollution can flow from one county to another. There is a need for a central organization to control disease and pollution and channel funds from the federal government to County Health Departments.

You can imagine what would happen if each county, municipality and school board was an entirely separate entity in the health field—free to deal with the federal government and other states on all questions. Confusion would reign if the federal government had to deal with each of the 67 County Health Departments on such problems as measles control, shellfish sanitation and financial assistance. Suppose each county had to deal directly with other states, such as Georgia and Alabama, on the problem of pollution of rivers flowing from those states.

But such confusion was prevalent back in the 1880's when the State Board of Health was organized. This issue of **Florida Health Notes** will tell you about the beginning of Florida's partnership in public health, how it grew and how it operates today.

## **The State Board of Health and Early Health Services**

The State Board of Health was formed in 1889 under authorization by the State Constitution of 1885. At the same time, the constitution authorized the formation of county boards of health.

One of the major interests of the State Board of Health was the quarantine of communicable diseases. But the county boards of health were also interested in the same topic and each county adopted its own regulations for the control of epidemic diseases—particularly yellow fever, the main concern of health officials at the time.

Different county regulations were enforced by persons who had deep fears of communicable diseases but shallow knowledge. Confusion was widespread in Florida in the 1880's and 1890's when travelers and goods were halted at county lines because they were suspected of coming from areas infected with yellow fever. In the face of existing or rumored epidemics, written permissions could be and frequently were required for persons and merchandise to cross county lines. Sometimes these permissions could be bought for a price.

The confusion was evident and the division of authority between the State Board of Health and county boards of health was realized by many people to be a mistake. The first State Health Officer, Dr. Joseph Y. Porter, recommended and the Legislature approved the abolition of county boards of health as then established.

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### **FLORIDA HEALTH NOTES**

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Despite the problems of the local boards of health, it was evident that a public health representative was needed in each county. Selected practicing physicians were designated by the State Board of Health as "county agents." Their work and reports indicated that they were chiefly concerned with epidemic diseases, such as smallpox, and other acute communicable diseases.

Cities were free to form their own health departments. All were later incorporated into county-wide health units of one form or another.

For several decades Florida had to rely upon a loosely woven district system with the state divided into five districts. Except in the larger cities and towns, local health services during this period were provided mainly by persons employed by the State Board of Health. Each district had a health officer, sanitary officer, public health nurse and clerk. Headquarters were in a central location of each district which was composed of 12 to 15 counties. Each district served by the meager staff had an estimated population of 300,000 persons. The districts operated on funds allotted from the State Board of Health, the U. S. Public Health Service, the counties, and in some instances, other local agencies such as the Tuberculosis Association.

## **The Beginning of the Florida Partnership**

No story of the organization of Florida's partnership in health could be made without mentioning the Rockefeller Foundation which carried out extensive sanitation control work and hookworm control between 1913 and 1930. Its workers went from county to county diagnosing and treating hookworm victims, stimulating sanitary improvements, and teaching physicians and the public.

However, evidence showed that there was need for continuing, not itinerant, public health units, and between 1913 and 1930 the Rockefeller Foundation helped organize some 500 health units—predominantly in the South but there were none in Florida. Presumably, plans for a health unit system were underway in the state.

The period between 1917, when Dr. Porter retired, and 1932 was one of retarded growth for public health in Florida. The early 1920's were lean years for the State Board of Health. A

state administration was elected on the promise to reduce the state millage and the legislature did so—by one-quarter mill—all from the State Board of Health budget. Several legislative sessions were to pass before the lost funds were restored.

During the 1920's, a detailed plan had been worked out by the State Board of Health which set forth the county unit system. This plan called for a minimum staff of a full-time medical health officer, a public health nurse, a sanitary inspector, and a clerk. The basic staff and miscellaneous expenses could be provided on a budget of \$10,000. It was planned that at least half of this money would come from the counties themselves.

The health units would be a component of the state public health organization with the responsibility for the health of the people resting with the five-member State Board of Health (which is the policy-making body) and the State Health Officer; and the administration set in the Bureau of County Health Units. Later this was to become the Bureau of Local Health Services.

The boards of county commissioners were to agree with the State Board of Health on the hiring of personnel and expenditure of funds. In order that acceptable public health procedures would



Consultants from the State Board of Health, such as this one from the accident prevention program, serve the County Health Departments.



After having a fulltime health service, a community without a fulltime health department is in much the same position as the individual who gives up his automobile and goes back to the horse and buggy. He soon realizes that he is getting nowhere fast. However, a little progress can be made by a local health department which has no ties to a central agency. Much wider, professional services can be given where there is a "partnership in health."

be carried out, the State Board of Health was to act as an advisor on the engaging of qualified personnel.

During the time when the cities and counties had their own health departments, and prior to the setting up of the county units under the State Board of Health, local part-time officers varied from busy physicians to veterinarians and untrained laymen.

Taylor County, which had experienced the effects of programs for control of malaria and hookworm, was the first to organize a county health unit. This was in 1930. Leon and Escambia County Health Departments were organized during the next two years and these have continued without interruption. Taylor County found money was scarce so its health unit was out of business from 1933 to 1935.

## **The County Health Unit Enabling Act**

An important piece of legislation, the County Health Unit Enabling Act, was passed in 1931. The Act wrote into law many of the recommendations approved by the State Board of Health 10 years earlier, and it has proven so satisfactory that only minor changes have been made since it was passed.

The key word in the law is "cooperate." The law authorizes the counties and cities of the state to "cooperate with the State Board of Health in the establishment and maintenance of fulltime local health units for the control and eradication of preventable diseases, and inculcate scientific methods of hygiene, sanitation and the prevention of communicable diseases."

An important feature of the Act makes it possible for two or more counties to "cooperate" and agree to form a county health

unit under one health officer. This makes it possible for smaller counties to afford the services of an active health department with fulltime, professional health workers.

To enable counties to carry out the law, they were authorized to levy an annual tax of one-half mill in counties of more than 100,000 persons; one mill in counties with populations between 40,000 and 100,000; and two mills in counties with population under 40,000. The money was to be deposited in the state treasury for the sole purpose of carrying out the health programs of the counties. Expenditures were to be carried out in agreement with the boards of county commissioners and the State Board of Health

The State Board of Health was also authorized to arrange with the Federal Government for the allocation and expenditure of federal funds in the study and prevention of disease in the county health units established under the Enabling Act.

As stated in the original plan of the State Board of Health, the staff of the health unit was to include a director (a physician), a public health nurse, sanitary officer and clerk. They were to be employed by the board of county commissioners with the approval of the State Board of Health.

In some counties health authorities had difficulty in collecting funds pledged by various groups and agencies for the support of the health work. The County Health Unit Enabling Act made it possible to support the health units by taxes and thus put the health programs on a more stable basis.

More funds became available in substantial amounts under the federal Social Security legislation of 1935 and there followed in 1939 more state money to aid the county health units. In 1932, Taylor County contributed \$4,832 to the health unit; the State Board of Health added \$1,666; and the U. S. Public Health Service, \$2,803.

Prior to the enactment of the Social Security Act, only Leon and Escambia Counties had health units in operation. From 1935 to 1941, 32 County Health Departments were organized and the Taylor County Health unit was reactivated.



County Health Department sanitarians receive training and professional advice on many local programs, including food hygiene, from the State Board of Health.

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Progress was slowed during World War Two but by 1952, all of Florida's 67 counties, but one, had active organized health units. The St. Johns County unit joined the partnership in 1960.

These county health units did not come about easily. Each of the counties had its own history of how the health unit originated. In some cases the boards of county commissioners had to be convinced. In other cases, the need was evident and the only problem was to find enough tax money to do the job. Some counties had local government support. In others, Parent-Teacher Associations, women's organizations and physicians were strong supporters and played active parts in getting the health units underway.

In some counties, cities with health departments had to be encouraged to pool their money with the counties for public health. School boards employing nurses had to be convinced that their students' needs could be better served by an organized health unit than by just a nurse working alone. Voluntary agencies frequently brought about the final persuasive force.

## Expanding the Partnership

The establishment of the County Health Departments was just the beginning. In 1945, the expenditures of the county health units totaled about \$900,000, and there were 429 full-time employees.

In the fiscal year ending June 30, 1968, the total amount of money spent by the State Board of Health for the County Health Departments was \$15.7 million. Of this \$11.5 million was from local sources; \$2.9 million was from state sources; and \$1.3 million was federal money. Employees in the County Health Departments in 1968 totaled over 2800.

Changes in the decades since the establishment of the County Health Departments have been many. Some of the programs carried on in the counties have involved personnel from the state level and/or state funds alone. Some of these include

- \* aid for venereal disease control through assigned personnel;
- \* salaries for nurses providing home nursing care;
- \* laboratory services;
- \* sanitary engineering services;
- \* consultative services; and
- \* training stipends for graduate study.

Some programs, such as the Hospital Services for the Indigent, are carried on through cooperative efforts and money provided by both state and counties.

## The Partnership on the Local Level

The description of the work of the County Health Departments would be a description of Florida's public health programs. The operating authority for much of the work of the State Board of Health comes through state statutes. Enabling acts and municipal laws give some authority to the counties. Most of the work is carried on by the County Health Departments.

The major function of the State Board of Health's bureaus and divisions is to supervise and advise the County Health Departments. The staff of the County Health Department is the active center of this program.

The **county health officer** is no longer concerned primarily with clinics, the examination of school children and immunizations. To an increasing degree he is a health administrator. He is more and more concerned with the handling of such local problems as environmental sanitation, hospitalization of the indigents, the follow-up of tuberculosis and mental health patients, and nursing care of the sick in the home, just to name a few. The local health unit is being more and more closely related to medical care and the county health officer is finding himself in the key administrative role of assuring the availability of comprehensive, preventive, therapeutic and rehabilitative services.

Most **sanitarians** are found in the County Health Department. Today he is a college graduate with training in biological sciences or related fields. It is his responsibility to handle those problems in environmental sanitation which do not require the immediate use of medical or engineering skills. He answers the urgent calls of the citizens of the state to "take care of a mad dog," correct a malfunctioning septic tank, put down a food-borne epidemic, or take care of some public health program which is thought of as a major concern to the citizens.

The **public health nurse**, though a member of the nursing profession, is now a public health specialist. Along with the sanitarian and clerk, the public health nurse is the member of the "partnership" which deals directly with the public. She works in the clinics, makes home nursing and health supervision visits, sees children in school, is a liaison between schools and parents regarding student health problems, and carries out many public health functions.

The fourth member of the County Health Department staff is the **clerical worker**. In addition to her work as a clerk, stenographer and secretary, she often works as receptionist, information officer and business manager. In larger county health units, these assignments are given to several persons. The business manager has become increasingly common and his work is recognized as that of an important senior staff member. The County Health Department cannot function efficiently without a clerk, or in larger counties, without a strong clerical, fiscal and administrative staff.





The State Board of Health's sanitary engineers approve plans and supervise the operation of public water systems to make sure that Susie's drinking water is safe. Regional and county engineers also help with the program.

## Partnership in Environmental Health

As previously stated, the major functions of the various State Board of Health bureaus and divisions are to supervise and advise the County Health Departments so that the best health services may be given to the people of Florida and the millions of tourists who visit our state each year.

The State Board of Health offers professional advice in environmental health to the County Health Departments on veterinary public health, milk inspection, radiological and occupational health, accident prevention, communicable disease control, and basically, on such sanitation programs as food hygiene, food service outlets and plants, private water supplies, public facilities in buildings, abattoirs, schools, camps and trailer parks. Consultants make frequent routine and invited visits to the County Health Departments.

The State Board of Health is required by various laws to issue permits to tourist and trailer parks, food processing plants, rendering plants, migrant labor and recreational camps, and bottled

drinking water plants. Local sanitarians make inspections and send applications for permits and inspection reports to the State Board of Health. The state health agency makes sure the applicants meet the requirements of the Florida Sanitary Code and issues the permits.

The State Board of Health also coordinates statewide reports for the U. S. Public Health Service which periodically issues lists of approved facilities in Florida.

The state health agency also seeks to upgrade the level of environmental health work by providing general sanitation in-service training programs for local sanitarians. These programs include two 12-week training courses a year, and correspondence courses offered by the Communicable Disease Center of the U. S. Public Health Service.

## **Partnership in Sanitary Engineering**

For those areas of environmental health which require professional engineering skills, the State Board of Health and several County Health Departments have sanitary engineers on their staffs. To carry out the various programs, there is a cross-the-board working, professional relationship and understanding between the State Board of Health, its regional engineers and County Health Department sanitarians.

Cooperative work is carried on in such important programs as inspection and permitting of public swimming pools; approval of plans and routine inspection of public water systems, permitted bathing places, public sewerage systems, incinerators, shellfish beds and packing houses; and surveillance for air and water pollution.

Due to the enormity of the task, the County Health Departments' engineers, or the regional engineers, assist the headquarters staff by making inspection and submitting reports to the State Board of Health for plans on local sewage treatment facilities which are being built under federal sewerage grants.

The issuing of septic tank permits is a County Health Department function. But in some areas of the state, where there is tremendous population growth and where the use of septic tanks present a health hazard, this is a big task. Therefore the State

Health Officer has noted these areas and arranged for joint agreements between the regional sanitary engineers and the county health officers whenever septic tank permits are issued.

## **Partnership in Nursing Service**

The primary purpose of the State Board of Health in the field of nursing service is to offer assistance to the more than 850 public health nurses throughout the state who supply community nursing to the people of Florida.

The staff of nursing consultants represents a wide range of nursing interests. They coordinate all requests for public health nursing skills and services from bureaus, divisions, projects and programs of the State Board of Health in order that the best possible nursing service be given.

Two major committees are involved in promoting the partnership for health between the State Board of Health and local public health nurses.

One is the Public Health Nursing Advisory Committee, with members from the State Board of Health, schools of nursing, large and middle-sized County Health Departments, and a staff nurse. Any important matter that affects the nursing service in Florida is brought before the Advisory Committee which makes recommendations as to a solution.

The second committee is the Continuing Education Committee, which has the same composition as the Advisory Committee. The purpose of this committee is to begin, promote and carry out programs of continuing education for public health nurses in Florida.

The State Board of Health staff provides nursing consultation to the County Health Departments; interprets to the public health nurses at the local level the nursing responsibilities of various programs of the State Board of Health; and provides leadership for the continual evaluation of programs and nursing services.

Through the Advisory Committee, the State Board of Health studies, defines and works toward the implementation of nursing activities; sets up standards, qualifications and salaries for public health nurses as proposals to the State Health Officer and State Personnel Board; and promotes and strengthens the supervision of nursing at all levels.



The public health nurse is one of the main channels through which health services are supplied from the State Board of Health to the public.

## Partnership in Arthropod Control

Mosquitoes and other arthropods, whether disease carrying or merely pests, were recognized as problems in Florida even by its earliest settlers—the Spaniards. The control of such pests is necessary for the comfort, health, welfare and prosperity of the people of the state and its visitors.

All depressions, lagoons, marshes, ponds or lakes where mosquitoes lay eggs and hatch are considered public nuisances and Florida laws have set up mosquito control districts for the purpose of controlling these pests.

Freeholders of a county, or portion of a county, may petition their board of county commissioners for an election to create a mosquito control district and levy taxes for the operation of the district.

In some counties, the boards of county commissioners have authorized the County Health Department to administer and direct the arthropod control work in the county.

As of 1968 there were 58 mosquito control districts in Florida. The State Board of Health approves the annual work plan and budget of each district, and handles the state money which is portioned to the districts. Each district may receive up to \$15,000



Millions of dollars of state and county money are spent each year in the control of mosquitoes and other insects. Fogging is just one of the many phases of the arthropod control program.

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in State I funds on a dollar-for-dollar matching basis for temporary or permanent arthropod control work. Any State II funds, which may be up to 75 per cent of the local budgeted funds, may be used only for permanent control activity. For the year ending September 30, 1968, local funds amounted to \$6.5 million, while state funds were budgeted at \$1.6 million.

The State Board of Health sends each of the 58 mosquito control districts quarterly payments to carry on its work. On occasion the State Board of Health may supply insecticides to the districts and then credit the district's account with the amount of the chemicals in lieu of payment.

Cooperation between the State Board of Health and the counties for the eradication of mosquitoes has been continuous since 1949 when the state agency started supplying equipment and insecticides. Prior to that time, there were a number of programs using county, state and federal monies but there was no continuous effort. However, in 1953, the Legislature passed the Mosquito Control Act, which tied together all previous laws and set up the mosquito control districts and provided for the now excellent plan of operation.



## Partnership in Preventing Communicable Diseases

The State Board of Health is held responsible by law for the control of communicable, contagious or infectious diseases. In carrying out this program, it delegates some of its authority to the County Health Departments which collect the vital information, carry on preventive measures, and supply much basic research in communicable disease control. But the State Board of Health maintains overall responsibility.

According to the Rules of the State Board of Health, there are over 60 communicable diseases which are reportable to the state agency. These include diseases which may be of danger to the public health, cases or suspected cases of animal bites, or animal diseases transmissible to man. These diseases are reported by private physicians or veterinarians to county health officers, who in turn report the cases to the State Board of Health. Most of them are to be reported within 24 hours of being discovered. Non-communicable diseases, such as cancer, industrial dermatitis (skin infection), pneumonia, congenital heart disease, and dog or other animal bites which may cause rabies, are also reportable.

The local county health officer maintains a surveillance of communicable diseases and thus protects the health of the community by initiating proper control measures.

When a county health officer reports a communicable disease, the State Board of Health asks some basic questions:

- \* Is the disease confirmed by the laboratories?
- \* What is the private physician or county health officer doing to protect the public interest?
- \* If indicated, is the person appropriately isolated?
- \* Where did the person get the disease and to whom has he given it?
- \* Was it contracted in a foreign country, or was it from a local source?

In the case of many communicable diseases, such as arboviral encephalitis or food poisoning, which are of significance to the health of the public, the State Board of Health sends epidemiologists into the field to see that specimens are properly col-



State Board of Health's epidemiologists and technicians assist the County Health Departments with immunization campaigns.

lected and handled and the public is protected. The State Board of Health and County Health Departments are interested in the clinical diagnosis of the individual and epidemiological diagnosis: That is where did the patient get the disease and to whom has he given it? In helping to find such answers to epidemiological questions, and in the prevention of the spread of communicable diseases, the State Board of Health supplies the County Health Department with the services of specially-trained physicians, technicians, vaccine and scientific resources.

The State Board of Health also assists the County Health Department with studies which search for the answer to many questions about communicable diseases and their prevention.

One such study is the Tampa Viral Immunization Survey which will provide base-line data for community patterns of immunizations. In this particular study, the object is to provide information on "pockets" of susceptible persons who were not immunized and who could possibly endanger the entire community. The State Board of Health helps supply technical knowledge, laboratory support and examinations, some of the technicians who do the work, data processing, and analysis of the data. The County Health Departments will also supply many workers.

Another area where the State Board of Health supervises the County Health Departments is the field of reporting communicable diseases.

By law the county health officers must report communicable diseases to the State Board of Health. The state agency compiles these into weekly morbidity reports which are sent back to the county health officers so they know what is going on in neighboring counties.

Private physicians annually send hundreds of thousands of specimens to the State Board of Health laboratories for analysis. The laboratories give the physicians the results of the tests. They also report positive findings to the county health officers so they will know what communicable diseases are in their counties. The State Board of Health watches for clusters of communicable diseases, such as shigellosis, salmonellosis or food poisoning, through the morbidity reports to learn of potential epidemics. Any evidence of an impending epidemic or a threatening situation is immediately investigated by the State Board of Health's epidemiologist. With county health officers' help, appropriate preventive action is initiated.

The State Board of Health also makes recommendations as to uniform control procedures for communicable diseases. Many such recommendations are treated as policy by county health officers. All recommendations from the Board of Health are based on critical studies of all pertinent data and information on the subject. Its recommendations of immunization schedules are a good example.

## **Partnership in Collecting Vital Records**

The collecting of vital statistics is an important part of the partnership in public health. The State Health Officer, by law, is the state registrar and county health officers serve as ex-officio registrars in their own counties. They are responsible for collecting information on births, still-births and deaths in their counties and reporting this information to the State Board of Health. Marriage statistics are collected by the county judges and forwarded monthly to the State Board of Health. Clerks of the Circuit Court send monthly divorce reports. Although these do not enter into the partnership of public health, they are a part of the overall picture.

Private physicians are responsible for filing birth certificates with the County Health Departments within 10 days following the event. Because many babies are born in hospitals today, these institutions have largely taken over the filing of birth certificates—although the physicians are still responsible under the law.

Death certificates are filed with the County Health Department by funeral directors. These must be signed by a coroner, attending physician or medical examiner and filed before the body is buried, or within three days afterward. Funeral directors also must obtain burial transit permits from the county health departments.

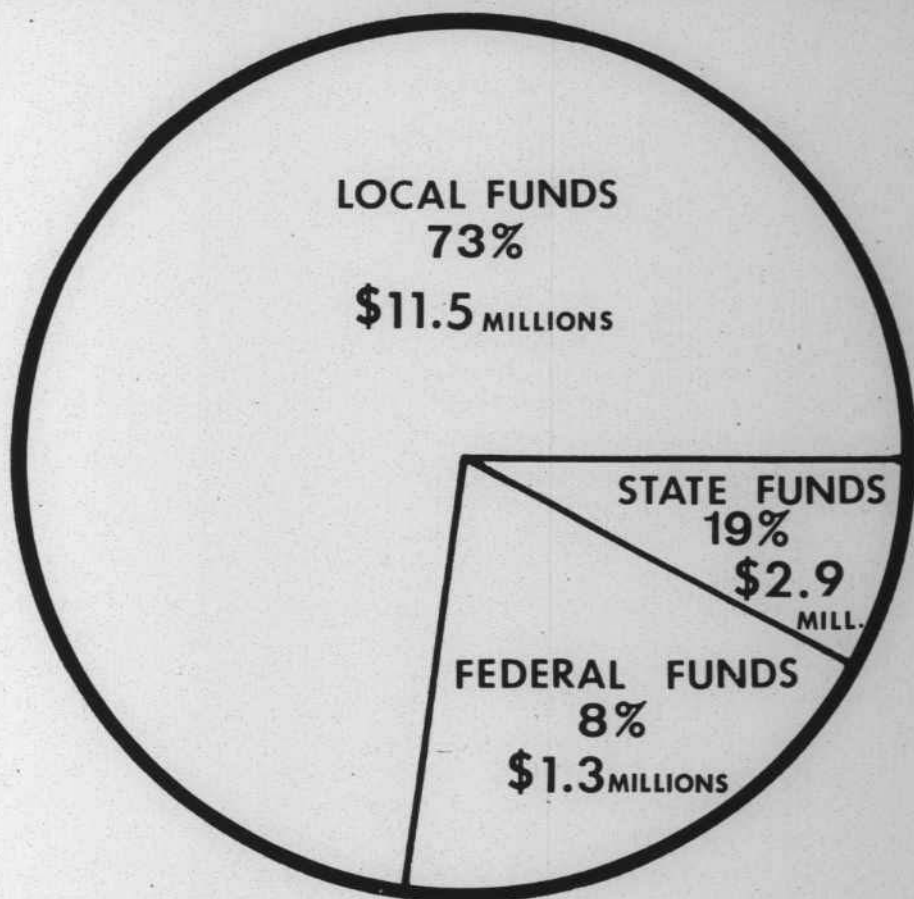
The county health departments check the certificates to make sure that they are properly and accurately filled out. At the end of each month the original certificates are sent to the State Board of Health and copies retained by the County Health Departments. Both the state and local agency can issue certified copies to properly authorized persons.

The State Board of Health preserves the vital records and prepares statistical reports for use by county, state and federal agencies. Because public health statistics are only as good as the basic information contained on the original certificate, county health officers continually try to improve the accuracy of their records. They also serve the State Board of Health as interpreters to the public on vital statistic laws.

## **Financing the Partnership**

Florida's form of public health partnership has been commended nationally because of its organizational setup and coordinated high-level public health programs carried on through state and county levels.

Money for the operation of the partnership comes from three major sources. Local funds come from each of the boards of county commissioners, who are empowered by the Legislature to levy taxes for public health purposes from one-half to two mills, depending upon the population of the county; from 37 school boards; and 20 municipalities. State funds are appropriated from general revenue and earmarked for the county health units. Also, there are some federal monies used for general purposes. Other federal funds are marked for specific projects.



A total of \$15.7 million was received by County Health Departments for the fiscal year ending June 30, 1968. Out of each dollar, county funds contributed 73 cents; state funds, 19 cents; and federal money, eight cents.

The proportion of local to state funds for the operation of the County Health Departments has become increasingly unbalanced in recent years. This unequal sharing of the financial responsibility for Florida's local public health programs has placed some strain on the state-local partnership for health. Some counties understandably resent being forced to provide most of the money for their health departments while most of the orders and policies come from the state level.


The State Board of Health has for sometime recognized this unfairness in the partnership and has therefore asked recent legislatures for more financial support to come from the state level.



The boards of county commissioners now appropriate by far the larger share of the money used in the County Health Departments.

During the current legislative session, the Board is asking for \$13 million to come from the general revenue for County Health Department work. This includes \$11 million for basic grants; \$1.5 million for air and water pollution control projects in the counties; \$512,500 to be added to nursing service for the mentally ill; and \$330,000 for employees' insurance premiums. A total of \$47 million is being sought for public health work conducted by the County Health Departments for the next biennium. Of this \$31 million may come from local sources; \$2.5 million from federal money; and the previously mentioned \$13 million from state funds.

If the state wishes to maintain a coordinated community health program within a state-wide framework, the state must provide more financial support to the counties. At best failure to do so will result in great unevenness in the provision of health services throughout Florida. At worst, the continuing lack of adequate state funds could cause a return to the past. The larger counties might choose to go their own way in health matters. Some counties might do well, others poorly. The end result would be an inefficient system unable to adequately meet the public health needs of a complex, rapidly growing state.



Bills incurred by the County Health Departments are paid by the State Board of Health through the local health unit. This method of "check and balance" helps to assure the taxpayers that they are getting the best health service for their money.

This is especially true in those densely populated, multi-county sections of Florida which have large numbers of highly mobile visitors and industrial workers streaming back and forth across county lines. Failure to provide uniform and efficient public health programs in each county in such metropolitan areas could, under an epidemic condition, be disastrous.

In operating the partnership, the monies appropriated in the counties are deposited in the state treasury and earmarked "County Health Unit Trust Funds." The County Health Department budgets are worked out between the County Commissioners, the county health officer and his staff, and the fiscal and administrative staffs of the State Board of Health. A memorandum of understanding is signed by each contributing source to assure that the money will be available. All bills incurred by the County Health Department, as well as the payroll, are paid by the State Board of Health through the local health department. This system of bookkeeping serves as a check and balance on tax money. The taxpayers are assured of a high level stewardship in the handling of their money, and that tax money is spent in the best and most effective manner.

## **Municipalities and School Boards**

While the State Board of Health cooperates with the boards of county commissioners to provide health services to residents of the counties, many of the state's municipalities and school districts also enter into agreements with the state agency.

At one time many of Florida's cities had municipal health departments. Gradually they were consolidated with the County Health Departments which were to provide county-wide health services. Dade County, in 1943, had three city health departments, a school health program, and a county health department. Under the leadership of the chairman of the board of county commissioners, and assisted by the local and state health agencies, these were consolidated into the effective Dade County Department of Public Health. Similar consolidations took place in Hillsborough County, despite the opposition of the rural areas and one small town; in

Pinellas County, without any fanfare; and in Escambia County, where the County and Pensacola each had a health staff under a single health officer.

In 1968, Jacksonville, which had the only city health department left in the state, consolidated its department with the Duval County Health Department to form a county-wide organization.

In the unique Florida system, the County Health Department is the only local governmental agency which dispenses health services to the public. Under specific agreement with the State Board of Health, the County Health Department acts as a municipal health department, enforcing municipal ordinances, such as in the areas of food sanitation and milk.

In the past many local school boards provided health services; but now the County Health Department provides these services under agreements with the boards of instruction. In order to help pay for the services provided by the County Health Departments, 20 municipalities, excluding Jacksonville, contribute to local health department budgets; and 37 school boards add other local tax money or federal funds.

## **Improving the Partnership**

While Florida has been commended for its public health programs and its public health organization, there is always room for improving the system. Many millions of dollars are involved annually in the public health programs—budgeted directly to the county health units for hospitalization programs, mosquito eradication and pollution control. In addition, sizeable amounts of money are provided for salaries, laboratories, drugs, home nursing services, vaccination assistance and other projects.

The administration of governmental agencies and expenditures of public funds requires extreme caution and dedicated public service. This is especially so in a partnership relationship between various levels of government. In order to improve the partnership in public health in Florida, the State Board of Health has set up a State-Local Relations Committee to review the relationship

between the State Board of Health and County Health Departments.

Members of the Committee represent the administration of the State Board of Health, small and large County Health Departments, and various professionals on the staff—such as physicians, public health nurses, sanitarians, clerks and sanitary engineers. The Committee has surveyed the entire working relationship of the health agencies in the light of present health conditions, present health programs, and in the light of political, population and economic conditions in Florida. Areas which have been under study include legal, administrative, fiscal, consultative and cooperative efforts. Sub-committees have been set up to discuss programs, management, fiscal matters, personnel and communications.

Recommendations, as the results of some of these studies, have been developed and put into effect in the state health program. These have made improvements in certain areas of the partnership. Better communications between the State Board of Health and County Health Departments has been one of the improvements resulting from the State-Local Relations Committee.

## **Why the Florida Partnership Works**

When it comes to public health in the United States, there are all degrees of cooperation between state and local health departments. Organizational systems have been set up which range from independent city health departments to state agencies that supply all health services directly to the people.

Ohio has 286 city and county health districts. Some of the smaller districts contract for health services from other health districts.

California's state health department makes grants to larger counties or local jurisdictions which otherwise operate independently of the state agency. Whether or not the local organization receives the grant depends largely on how it meets the standards set up by a committee of local health directors. Smaller counties contract for health services from the state health department which hires people to do the work.

Pennsylvania's health department serves the public through its Bureau of Field Services which operates county health centers or clinics in 63 of the 67 counties. The rest of the population is under local jurisdiction or municipal health offices.

Florida's public health partnership is typical of the Southeastern United States. The system has both state and local participation and it has worked well for nearly 40 years.

The Florida partnership in public health has standardized

- \* vital records handling and communicable disease control programs;
- \* health work at a high level;
- \* personnel operations, especially in scarce categories—such as physicians and nurses;
- \* movement of health personnel from place to place under the state's personnel board;
- \* salaries which are yet flexible and adaptable to the size of the counties;
- \* administrative procedures; the Federal Government prefers to work with a central system and requires that before federal money can be given, the system must have a merit or civil service setup; and
- \* an easy flow of consultation and program information which help to assure a high quality of public health work.

The Florida partnership provides the smaller counties the opportunity to combine into health units of two or more counties and thus give the citizens of those counties high quality public health service.

This partnership is important to the tourists because they are assured of basic health protection in each of the counties.

Where would Floridians be without public health?

The health picture of the state would be far different if the partnership did not exist. Florida statutes have made the state a national leader in many aspects of public health, and they have given the citizens of the Sunshine State protection and better health for many years.



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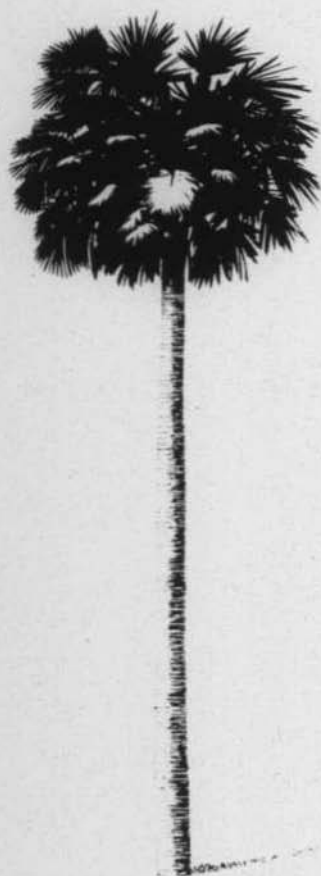
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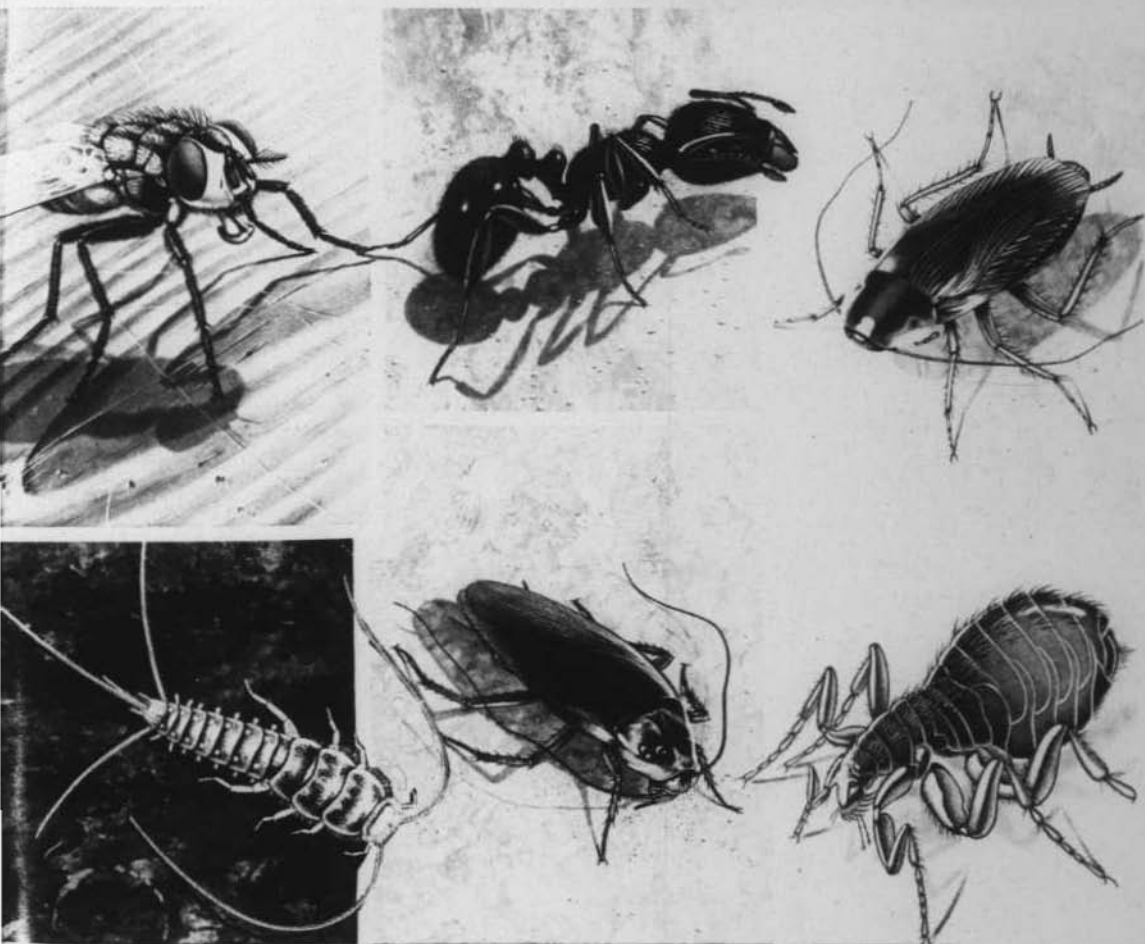
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# FLORIDA HEALTH NOTES



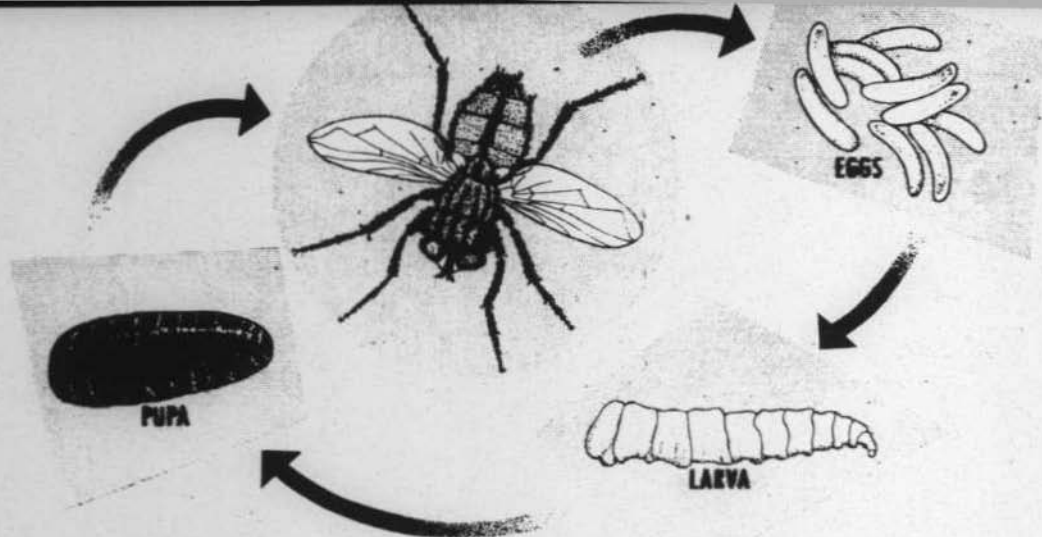
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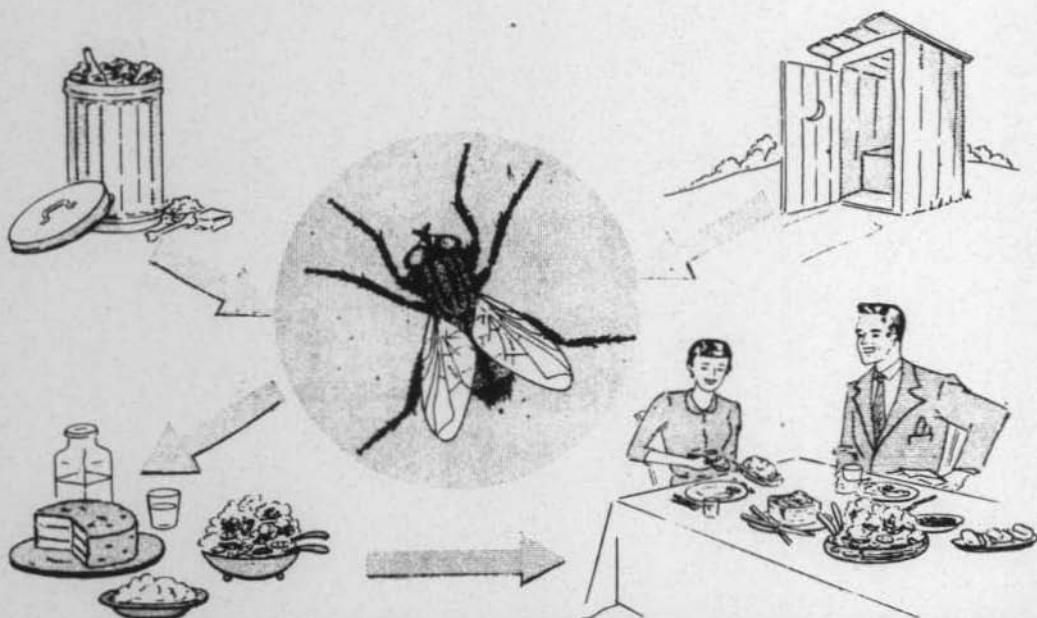
## Household Pests

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(Cover photo) If pest control is not practiced, some of these common insects may invade your home: (Top row) housefly, ant, German cockroach; (bottom row) silverfish, American cockroach, and flea. Instructions on how to control these pests, and others, are given in this issue of **FLORIDA HEALTH NOTES**. (From paintings courtesy of Gergy Chemical Corporation.)

The housefly is typical of an insect which goes through a metamorphosis of egg, larva, pupa and adult. One of the most common of insects, the fly feeds on filth and garbage and then infects food with bacteria. If allowed to multiply, the bacteria may cause food poisoning or typhoid in people who eat the food.



# HOUSEHOLD PESTS

Mrs. Florida Housewife was just about at her wit's end. She had found her cupboard infested with ants. Her flour and spices were crawling with little brown bugs. Her guests at a cookout the previous night had been driven indoors by mosquitoes. She had found signs of cockroaches in her bathroom. Her husband had discovered a few termite tubes leading from the ground up under the siding of the house. Rats had invaded the garage. This situation may be exaggerated but it could happen in the absence of good pest control.

There is no question that pests — insects and rodents — are a health problem in Florida. They also cause large economic losses and at times are serious nuisances. Perhaps they are more of a problem here than in the rest of the nation because of the state's warm climate. Visitors from the North and new residents often ask, why Florida has more "bugs" than they are accustomed to seeing in colder climates. Biological activity is greater when the temperature is moderate. The warm climate which contributes to our out-of-door living and pleasant way-of-life also is responsible for the year-around pest control necessary in Florida.

The open or light construction of our houses allows insects and pests to invade our homes. We live and eat outdoors much of the time, and this, too, attracts insects. Many Florida residents live in subdivisions which are built on reclaimed swamp and other wild land and many of the insects which lived there "in nature" do not move when the buildings come.

The inhabitants of the earth are divided into two types — animal and plant life. Insects are the most successful and abundant form of animal life. There are more known species of insects than there are of all other animals and all plants put together. When nature was making insects, she was in a most prolific mood. Scientists have said that without constant warfare against them, insects would take over the planet. There are some 965,000 species of animals in the world. Of these, 750,000 species are insects.

It is our intention in this issue of **Florida Health Notes** to offer some practical suggestions that will help Mrs. Housewife and her



family to prevent the take-over of their home by pests. This issue is intended to serve a purpose beyond that of a magazine article. It is prepared as a handbook on the control of some of the more common forms of household pests that invade our homes. There are many more insects that invade our gardens and lawns but space will not permit us to include them.

The pests are listed under paragraph headings with a brief description and discussion of each. In the center of the publication you will find a list of sprays, dusts, baits and repellents with a quick reference to proper control for particular rodents, insects or other arthropods.

### **How Insects Develop**

Almost all insects start from eggs laid by the female. These eggs vary greatly in shape, size, color and place of deposit. They may number from three or four for some species to several hundreds or thousands for others. Some insects, such as grasshoppers or chinch bugs, emerge as small miniatures of the adult. Others — butterflies, houseflies, bees and beetles — have a complete metamorphosis. The eggs hatch into little creatures known as larvae. During this stage, the insect repeatedly molts until it assumes a resting stage, or pupa, which may last from a few days to months.

While there is inactivity on the outside, changes are taking place inside. A slow moving caterpillar emerges to become a beautiful butterfly with a digestive system attuned to new foods and reproductive organs to produce or fertilize several hundred eggs. Adult insects have short lives. Many frequently lay their eggs and die in a few days. It is as nymphs and larvae that they are usually more destructive than as adult insects, with the exception of insects and other arthropods that transmit human diseases, such as mosquitoes, fleas, ticks, etc.

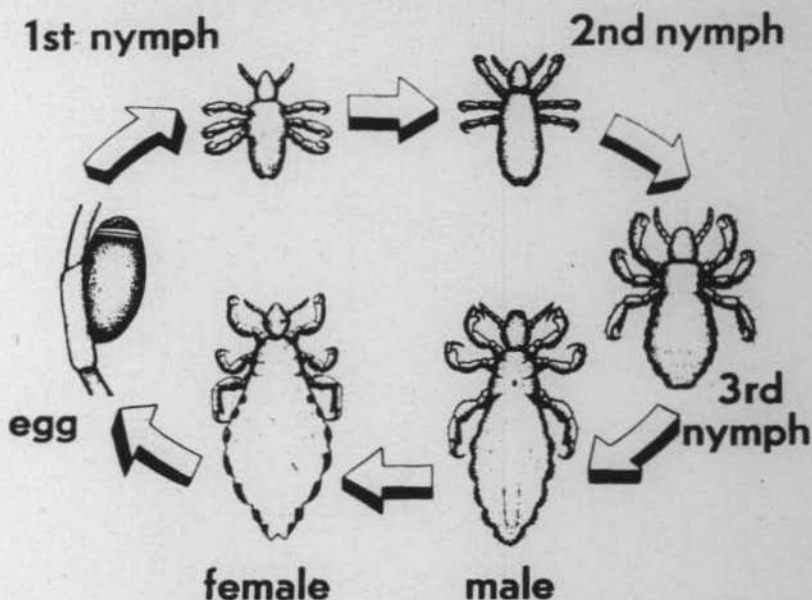
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#### **FLORIDA HEALTH NOTES**

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Some insects, such as the louse, emerge from the egg as miniatures of the adults, go through three stages of growth before becoming an adult and capable of laying eggs.

### Chemicals to Kill

Insecticides are intended to kill pests. While many commercial products legally carry the words, "Harmless to humans and pets," they are not intended to be used as food and should be kept away from food storage areas. The contents are not violently poisonous to man and animals but common sense dictates that chemicals meant to kill insects and rodents should not be stored together with food.

Household pests do not annoy us intentionally. They are looking for food and shelter. If they do not find them, they will not survive or remain in the area. But we should realize that what the insects consider food we may not regard as tasty. To some insects, food means paper, wood, cloth, mucilage, fur, hair, lint and many other things. **Cleanliness** is the first line of defense against household pests but it is not the only answer. Chemicals have been developed by man as a further means of controlling pests.

Insecticides are applied in three major ways:

\* Space spray — Chemicals under pressure in a "bomb" or for use in a spray gun. While this method is used for quick killing of flying insects there is little residual action.

\* Residual spray — Chemicals sprayed on walls and other surfaces leave a film and seep into cracks. This method leaves a poisonous chemical which kills on contact and the effect may last for weeks.

\* Powder or dust — Chemicals are spread or blown into hiding places and cracks to kill on contact.

Methods of application vary with the recommended insecticides listed in the center of this issue. Common sense must be used. Conditions vary greatly from home to home. Certain methods of application used in a home containing only adults may be unsafe in a home containing crawling children. The safety of pets must also be considered.

When using insecticides, wash your hands thoroughly after doing the job. If you are using spray or dust, you must remember that the insecticide is being mixed with the air you're breathing. So, don't stick your head into a cupboard or closet you are spraying. Breathe as little as possible of the spray; work in short periods; breathe fresh air between working intervals.

If spraying a room, wear a mask or cloth over the nose and mouth. Start in the far corner and work toward the door. Close the door after you're finished and air the room thoroughly before putting it back into normal use.

Many spray materials are combustible. They should not be used in a room where there is a fire or flames. Don't smoke when spraying. Since some sprays can stain walls and furniture and harm pets, choose your sprays accordingly.

If you have a serious pest problem, don't take chances on ruining your health or that of others by attempting a job too big to handle with amateur equipment and knowledge. Call in a licensed pest control operator.

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## ANTS

Ants are fond of most foods eaten by man and for this reason will invade the home. Most species live in outside nests, though a few do live and breed between walls, under sills, and

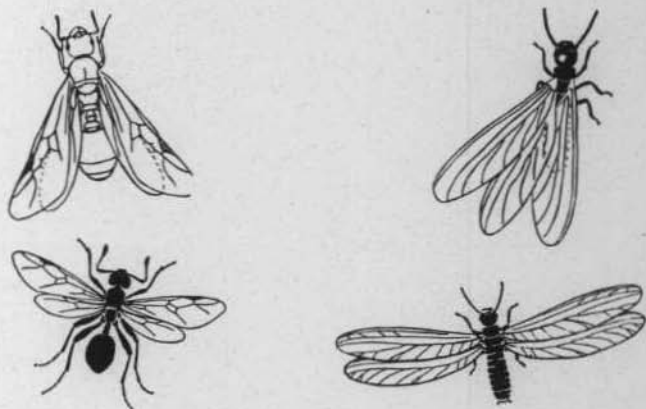
beneath flooring. The answer to the problem is to eliminate all sources of food and reach the nest with a poison that will wipe out the colony. Killing the few visible foragers will have little effect.

Ants, like most crawling insects, depend on cracks and crevices for protection and roadways to their nests. Ants are divided into four groups, according to their preference for foods: the carbohydrate, or sweet-eating ants; the protein eaters; the fat eaters; and the common feeders that will eat anything.

Cleanliness is the best way of controlling ants. The second step is to wipe out the nest if at all possible. This is done

by getting the ants to carry the poison to the nest with them. A stomach poison can be mixed with an attractive bait and the ants will carry the food back and poison the entire colony. Such poisons should not be used where there are small children or pets. Poison dusts may be blown into cracks around baseboards and other places where ants make their trails. These dusts will be carried back to the nest and eventually eliminate its population. Nests can be located and soaked with water-based insecticides, boiling water or kerosene.

Flying ants should not be confused with termites because control measures are quite different. The ant has a very narrow



**ANTS AND TERMITES**—Note the pinched waist of the ant (left) as compared with the thick-waisted termite. The termite's wings are nearly all the same length while the ant's rear wings are shorter than the front wings.

waist, bent or "elbowed" feelers, and at times, two long and two short wings. The termite has a much thicker waist, straight feelers, and the swarmers have four wings of equal length. Nei-

ther ants nor termites carry disease but ants contaminate food and the latter damages our buildings (see termites).

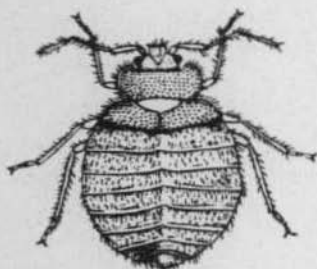
**CONTROLS** (See center pages) — 2, 6, 17, 21, 26, 27.

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## BEDBUGS

Bedbugs are the least "socially acceptable" of insects, and perhaps, one of the most annoying. To most people they indicate a very low degree of personal and household cleanliness

but they may be found in homes of the wealthy since bedbugs draw no sharp lines of distinction between the impoverished and the rich. Bedbugs must live off blood of man or animals for survival. They have been suspected of carrying disease but this has never been confirmed.



**BEDBUG**

feeding, the victim may have an itching sensation and a drop of blood may show at the point of puncture and some blood may stain the bed sheets.

The bedbug is a flat, oval, dark brown insect, a little less than a quarter of an inch long. It is larger and bright red after feeding. This is done by inserting the beak for three to five minutes into the skin of the victim, usually at night. Following

An infestation may begin when the bedbug is carried in on a mattress, bedding or clothing. The bugs will then infest the rest of the room, hiding in cracks and other dark places during the day. In Florida, bedbugs feed and breed the year around. Treat all cracks and crevices of walls, baseboards, bedsteads and hiding places. Treat mattresses lightly and air thoroughly before covering.

**CONTROLS** — 3, 5, 8, 11.



## CARPET BEETLES

Carpet Beetles do great damage to fabrics, furnishings and clothing containing silk, wool, hair, bristles, fur and feathers or other animal products. They will infest any area where such products or lint can be found.

The adults, which do no harm except produce the next generation, are hard-shelled, oval in shape and average one-eighth to one-fourth inches in length. They are found in colors varying from black to mottled white, red or yellow. The larvae, which do the damage, are active, brown or golden worms with bristles on their backs and a tuft of hair at the end of their bodies. The larvae shun light while the adults are attracted to it.

The small, white eggs are laid on or near the food supply, or in cracks in floors and walls. Stored fabrics are often infested and should be cleaned regularly. Floor cracks, quarter rounds and places where lint collects should be sprayed.

**CONTROLS** — 2, 3, 6.

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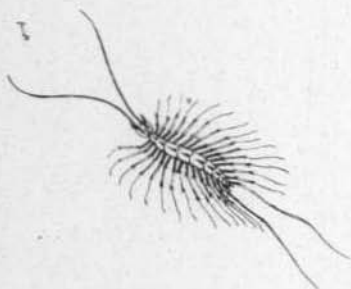
## CENTIPEDES AND MILLIPEDES

The Centipede, or "hundred-legger," is a fast-moving, flattened worm with a pair of legs for each body segment. It may grow from one to three inches in length and can inflict a painful bite with poison fangs. However, death rarely occurs, but in all cases of centipede bite, the wound should be disinfected and a physician contacted.

Some species of millipede, which has two pairs of legs to each body segment, are capable of squirting a blistering venom some distance and causing severe injury to the eyes or skin.

Both types may invade the home. When that happens, they could be destroyed by spraying baseboards, under sinks, behind stoves and refrigerators and other hiding places with residual spray. These insects normally live outdoors where they feed on other insects.

## CENTIPEDE



**CONTROLS** — 2, 4, 12, 19, 21.

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## CEREAL OR STORED FOOD PESTS

There are many species of stored food pests found in the pantry. Most of these are introduced into the home by contaminated or infested foods — loose or packaged. There is no food item in the kitchen which might escape infestation by some pest if the food remains in some dark corner or drawer. The housewife is not to blame, nor the grocer or manufacturer. These almost invisible insects have a way of finding what they want, particularly grain products. If left undisturbed under Florida conditions, the insects will raise large, well-fed families.

Prevention is the best protection. These ingenious bugs can

get into glass, plastic or metal containers if they are not tightly sealed. Spillage of flour or grain products should be promptly cleaned up. It is a good idea not to buy too much of such foods at one time.

Until a few years ago, the housewife had to accept weevil infestation as a normal way of life. Now the millers use electronic and other devices to catch these pests but sometimes flour and grain products still contain weevil eggs when they leave the mill. Good packaging has helped eliminate infestation on the grocer's shelves and good housekeeping can help prevent infestation at home. Don't keep food

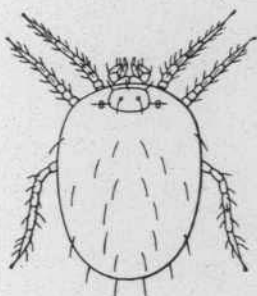
too long. Throw out any food that becomes infected. Clean cabinets and storage places; spray empty cabinets and shelves before restocking. Don't attempt

to sift out the insects because the food will contain insect eggs which you cannot see.

**CONTROLS** — 2, 3, 12, 33.

## CHIGGERS

Chiggers — redbugs — are the almost invisible immature stages of a mite. They are found in the home only when they are carried there by the painfully itching victim who had contact with them in a wooded area.



### CHIGGER

The chigger attaches himself to its human host with a hooked mouthpiece and sucks blood. It does not burrow its way into the flesh but the attachment results

in a severe skin infection with intolerable itching.

When properly applied, insect repellents will give protection against chiggers. A light rub-down with alcohol or campo-phenique and a brisk bath with soap and hot water will usually remove the insects. There are a number of products sold in drug-stores which will help alleviate the itching. It may be necessary to consult a physician to obtain relief from the stinging.

Chiggers are found in underbrush and overgrown areas. These should be cleared and mowed, if possible. If work or recreation takes you into wooded areas, a good repellent may be applied or sulphur powder sprinkled in shoes and socks and around cuffs of shirts and trousers.

**CONTROLS** (outdoors) 2, 10, 18, 24, 35, 36.

## COCKROACHES

Cockroaches are the most disgusting insect pests with which Floridians have to deal. They live on filth and carry organisms which spread diarrhea, Salmonella, food poisoning, dysentery and other diseases. Because of their relatively large size, they are capable of doing much damage to food and furnishings. Their size, speed and appetite cause them to migrate over considerable distance from building to building. Florida's warm climate keeps them active the year around.

Roaches vary in size from one-half to over two inches in length and in color from light brown to almost black — the German and American species, respectively. Some adults have wings which are almost invisible when folded over the back. All seek concealment during the day and are

active at night, scurrying to safety at great speed when alarmed. They eat any sort of food, filth, paper, leather, mucilage, starch. They give off a foul odor which cannot be mistaken for anything else.

The primary step to control cockroaches is to eliminate all possible sources of food and to clean out or reduce areas of breeding. Tight-fitting doors and screens, with no holes, should be maintained. It is recommended that a residual spray or dust be applied under sinks, stoves and refrigerators and other hiding places as a preventive control measure, even though the home may be apparently free of cockroaches at the moment.

**CONTROLS** — 4, 9, 12, 20, 23, 26, 28.

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## EARWIGS

Some misinformed individuals believe that these insects are capable of gaining access to the human ear and boring into the brain. They are harmless and

of no medical importance. While mostly an outdoor insect, they may enter homes during cold weather or become attracted by lights and thus become household pests.

Earwigs are short-winged, flattened, hardened, elongated, fast-moving insects. They are usually dark brown and about one-half to an inch long with a

pair of forcep-like pinchers at the tip of the abdomen. These are sometimes curled over the back of the body and resemble a scorpion.

*(Continued on Page 100)*

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## INSECT CONTROL

If an infestation of one or more of the insects or rodents listed in this booklet has occurred in your home, a chemical pesticide may be needed. Before using the chemical product, the area of infestation should be cleaned thoroughly to remove insects, eggs, pupal and larval stages, and the food supply on which the insects have been feeding.

Care must be used in selecting the killer chemical, the base carrier in which it is mixed, and the proper method of application — spray, liquid, dust or bait. A dust would not be selected for the living room, nor an aerosol for infestation of cockroaches in the garage. The proper concentration of chemicals must be considered — too much would be dangerous, too little ineffective.

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On the next two pages, you will find listed a number of chemicals recommended by the State Board of Health's Bureau of Entomology. These chemicals are listed on the back or side panel of pesticides you find for sale in markets, hardware, and garden supply stores. Read about the pest which is causing you trouble, note the numbers of the controls recommended, and refer to the chemicals listed under those numbers.

Use the pesticides with those chemicals according to direction on the package and observe all cautions given on the label.



## -- INSECT

### SPRAYS

- 1—Baygon — 1%
- 2—Chlordane — 2%
- 3—DDT — 5%
- 4—Diazinon — 0.5%
- 5—Dichlorvos — 0.5%
- 6—Dieldrin — 0.5%
- 7—Dimethoate — 0.5%
- 8—Malathion — 1%
- 9—Malathion — 2%
- 10—Lindane — 1%
- 11—Lindane oil — 1%
- 12—Ronnel — 2%
- 13—Diazinon — 25% (3-6 oz. in  
15-20 gal. of water per 500  
sq. ft.)
- 14—Malathion — 57% (1.5 oz.  
in 15-20 gal. of water per  
500 sq. ft.)

### DUSTS

- 15—Carbaryl — 5%
- 16—Carbaryl — 10%
- 17—Chlordane — 5%
- 18—DDT — 5%
- 19—DDT — 10%
- 20—Diazinon — 1%
- 21—Dieldrin — 2%
- 22—Malathion — 1-5%

### BAITS

- 23—Malathion — 5%
- 24—Lindane — 1%
- 25—Old fashioned sticky fly pa-  
per and ribbon
- 26—Kepone bait — 0.125%
- 27—Mirex bait
- 28—Roach tablets (boric acid)

## -- QUICK F

This is a quick reference to the  
rodents listed in this booklet.  
killer ingredient (listed above)  
the product you buy.

- Ants — 2, 6, 17, 21, 26, 27  
Bedbugs — 3, 5, 8, 11  
Carpet beetles — 2, 3, 6  
Centipedes — 2, 4, 12, 19, 21  
Cereal pests — 2, 3, 12, 33  
Chiggers — (outdoors) 2, 10, 18,  
24, 35, 36

- Cockroaches — 4, 9, 12, 20, 23,  
26, 28  
Earwigs — 1, 4, 16  
Fleas — (indoors) 3, 4, 9; (out-  
doors) 13, 14, 23; (on ani-  
mals) 15, 23  
Flies — (indoors) 25, 30, 31;  
(outdoors) 7, 12

## CONTROL - -

- 29—Anticoagulant rodenticides, diphacinone, fumarin, pival, PMP, or warfarin commercially prepared under various brand names as dry or liquid bait.

### SPACE SPRAYS

- 30—Pyrethrin — 1-2%  
31—DDVP — 0.5%  
32—Malathion fog — 2/5%

### FUMIGATORS

- 33—Dichlorvos resin strips  
34—PDB moth flakes

### REPELLENTS

- 35—Diethyl toluamide  
36—Ethyl hexanediol

- 37—Malathion dip — 1/4%  
38—Malathion wash — 1/2%

### SOIL POISONS

- 39—Use chlordane; dieldrin; or aldrin. Mix and apply chemical according to label directions for subterranean termite control, or as recommended in Home and Garden Bulletin No. 46, entitled "Subterranean Termites," published by the U. S. Department of Agriculture and available from the county agent.  
40—Fumigation recommended. Consult professional exterminator licensed to do this work.

## REFERENCE - -

Upper controls of the insect and numbers indicate the main or which should be in the formula of

Hornets, etc. — 2, 3, 6, 17, 18  
Lice — 9, 19, 22  
Mosquitoes — 9, 31, 32, 35, 36  
Moths (clothes) — 2, 3, 19, 33,  
34  
Powder-post beetles — 2, 6  
Rats and mice — 29

Silverfish — 2, 3, 4, 19  
Spiders and scorpions — 2, 6, 10  
Termites — (subterranean) 39;  
(drywood) 40  
Ticks — (indoors) 4, 9; (yards)  
13, 14, 15, 23; (on animals)  
37, 38

The best control in the home is to maintain close-fitting doors, and when necessary, spray along

the edges of baseboards and other areas where they hide.

**CONTROLS** — 1, 4, 16.

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## FLEAS

Fleas are small, dark reddish-brown, wingless, blood sucking insects. They are flattened vertically permitting them to move among the hairs of the host's body. Their legs are long and adapted to jumping. Fleas should not be confused with lice (see Lice). If the insect has come in contact with an infected animal, it is capable of carrying certain internal parasites. The rat flea can carry typhus fever and plague.

Fleas are associated with pets and usually breed and live in the pet's area of the home.

They will jump to man for a blood meal if the pet is absent. Thus they may be transmitted to all parts of the home where they breed in cracks of the floor, around baseboards, and beneath carpets.

Control measures must be directed first toward the elimination of fleas from the pet, the pet's area, and then the house and its human residents. Sand fleas are an outdoor variety with the same habits.

**CONTROLS** — (indoors) 3, 4, 9; (outdoors) 13, 14, 23; (on animals) 15, 23.

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## FLIES

Houseflies are one of the most common and annoying pests, and most important, they are disease carriers. They present many problems to the household.

Flies will feed on human and household foodstuffs and wastes, livestock feed, garbage dumps and any form of decaying vegetable or organic matter. For breeding, however, they need an

undisturbed source of such material and here lies the clue to their control.

Fly control involves the removal of all breeding materials — garbage, rubbish, decaying vegetation and manure. The adult fly must be excluded from all sources of food, such as home garbage cans and dumps. Screens must be placed on dwellings and barns. Even then some flies will be seen and chemical

means will be required to eliminate them.

Flies are active during daylight and rest at night on ceilings, upper walls, drapes, cornices, light cords and other high places. In planning long-term fly control, it may be necessary to spray these resting places with residual insecticides.

**CONTROLS** — (indoors) 25, 30, 31; (outdoors) 7, 12.

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## HORNETS, WASPS, YELLOW JACKETS MUD DAUBERS AND BEES

Honeybees are ordinarily beneficial in their habits, but if they attack man or become colonized in the walls of his house, they can be undesirable tenants. Wasps, hornets, yellow jackets and mud-daubers are occasionally found in nests in carports, garages, under eaves, sometimes in shrubbery, and under a protected roof or shelter.

Not only are their presences annoying, but their stings may

be painful and sometimes serious. A number of people have died because of sensitivity to the poison or because of tetanus bacteria introduced by the stinger.

If a colony of bees is found, it is better to call for an expert, such as a bee keeper or someone from the agricultural agent's office to capture and remove the bees. If the bees are sprayed, the poison contaminated honey should be removed because it

## HORNET



will attract ants, carpet beetles, cockroaches and other undesirable insects.

If hornets, wasps, yellow jackets and mud-daubers present a problem, they can be eliminated by chemical methods. Apply insecticides to nests, or if they are in the ground, they should also be covered with dirt. Care should be taken in knocking down unsightly nests as there may be insects around to attack.

**CONTROLS** — 2, 3, 6, 17, 18.

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## LICE

Lice are flat, wingless insects, ranging from whitish to blue-gray which are transferred from one person to another by contact of body, clothing or bedding. They are blood-sucking insects that transmit disease (epidemic typhus, relapsing fever and trench fever). They should not be confused with fleas (see Fleas). The insect also causes a tiny itching sore, which if scratched, opens up the possibility to infection or other diseases.

The elimination of lice is a matter of personal hygiene. The insects infest the hairy parts of

the body and lay their eggs there and in the clothing while it is being worn. Clothing should be washed or dry cleaned and left unworn for two or three weeks, allowing the unkilld eggs to hatch and the larvae to starve. A suggested means of control is a 10 per cent DDT powder dusted liberally into the body hair and clothing. Repeat in about a week.

Bird and rat lice (and mites) sometimes enter homes and in these cases, the bird or rat nests must be eliminated before control is complete.

**CONTROLS** — 9, 19, 22.

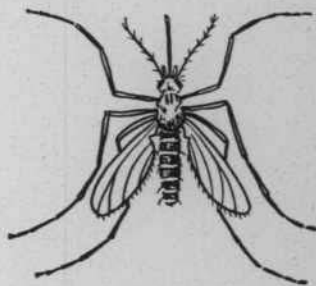


# MOSQUITOES

Mosquitoes are Florida's most notorious insects. Because they can and do spread such diseases as yellow fever, malaria, dengue fever, filariasis and encephalitis, the state spends millions of dollars each year for their control. Although the first three diseases have disappeared from the state, the mosquitoes capable of transmitting these diseases are still here. Encephalitis is still a problem in Florida.

Fresh-water mosquitoes are usually divided into two main groups: the domestic which breed in receptacles, and those which breed in ground water. Though any type may occasionally enter the home, the domestic, or common backyard mosquito is the one that the home owner can control. These mosquitoes breed in containers which hold stagnant water. These include tin cans, tires and other junk, bird baths, garden ponds, tree crotches, air plants and puddles. Eliminate these breeding places and you've gone

a long way toward eliminating domestic mosquitoes.



MOSQUITO

These mosquitoes and far-ranging mosquitoes rest in shrubbery, garages, carports and sheds during the daytime. They can be controlled in these places with residual sprays. Mosquitoes of any species depend on standing water to complete their life cycle and by removing this source, the mosquito can be controlled. Temporary control measures can be carried out by applying mist spray to a room and keeping it closed for 10 minutes.

**CONTROLS** — 9, 31, 32, 35, 36.

## MOTHS (CLOTHES)

Moths are active in Florida the year around. Their larvae feed only on clothing containing animal products and control involves good housekeeping with chemicals lending a helping hand.

There are two general misconceptions about clothes moths. They are not attracted to lights as are night flying "millers." They prefer darkness. The adult flying moths are harmless in themselves, but they produce the eggs from which the next generation emerges.

Sunshine is a deadly enemy of cloth-damaging moths and their larvae. A few hours in the hot sunlight will kill these insects, even if hidden in pockets and seams. Periodical sunning, dry cleaning and brushing of clothing and woollens are good control measures. Infestation frequently begins in old or soiled



**CLOTHES MOTH**

woolen garments or other articles containing animal fibre which are neglected in a dark storage area.

Prevention involves the thorough cleaning and spraying of closets, chests, and trunks; and the hanging of resin insecticide strips. After dry cleaning, washing, sunning and brushing, clothing may be restored.

**CONTROLS** — 2, 3, 19, 33, 34.

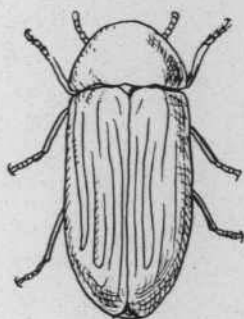
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## POWDER POST BEETLES

These tiny insects in the larvae stage burrow into the surface of unfinished wood where they make many damaging tunnels. They change into adults

and bore their way out, leaving tiny round holes about one-sixteenth of an inch or more in diameter. The adults lay eggs on the surface; the eggs hatch;

## POWDER POST BEETLE



and the process is repeated. The beetles will attack any lumber that is not painted or finished in some way, including furniture. Their tell-tale sign, in addition to the holes, is the fine dust which accumulates where they are active. Unfinished wood may be protected with a residual spray.

CONTROLS — 2, 6.

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## RATS AND MICE

While rats and mice are not insects, they are important household pests. Their presence is dangerous to health in that the rat flea transmits typhus and plague — not to mention damage to food and destruction to property — and they should be controlled no matter what the effort or expense.

There are three important species of domestic rodents and they are all dangerous and unwelcomed. Some prefer to burrow; others like to live in attics and treetops. Some have meat for a favorite dish; others prefer fruit or cereals. Both rats and mice are attracted by poor housekeeping, indoors or outdoors. Garbage, junk, refuse and thick underbrush provide homes and food for rats and mice.

All rodents are gnawers. They can use their teeth to get through almost anything, except hard metal. But they can enlarge a hole already existing in a metal weakened by rust.

The best control of rats and mice depend on the elimination of hiding places and food and water. Hiding places which cannot be eliminated should be made unsuitable for their habitation.

Move stored trunks and chests out from the walls of attics. Get rid of piles of loose materials—papers, clothing and old rags. Make corners and narrow spaces open and non-protective. Remove all sources of food and water and keep garbage in a closed metal container. Then begin a campaign of warfare against the

rodents by the use of baits and traps. See **Florida Health Notes**, Volume 60, No. 8, August 1968,

for details.

**CONTROLS — 29.**

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## SILVERFISH

These are annoying household pests and may cause damage to books and clothing or other fabrics made of linen, paper, rayon, wallpaper, book bindings, package labels or other glued or starched materials. They look like little silver fish with antennae or feelers on their heads and triple tails. They hide in the daytime and feed at night. They do not bite man or animals and do not carry disease.

They are hardy insects and may live for many months on very little food. On the other hand, they lay few eggs and do not increase rapidly. They do not live on "filth" and clean house-keeping is not an insurance against them. However, they can be controlled with residual chemicals sprayed where the insects are frequently seen. Books and stored paper products should be dusted.

**CONTROLS — 2, 3, 4, 19**

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## SPIDERS AND SCORPIONS

Spiders, while a nuisance around the home, are frequently beneficial because they destroy many forms of destructive insects. Almost all common "house spiders" are harmless but are obnoxious through their unsightly webs.

The only poisonous spiders of importance in Florida belong to the black widow spider group which can inflict a dangerous venomous bite. Although painful, it is not fatal. If a person is

bitten, he should apply an ice pack to the affected area and contact a physician immediately. The common black widow spider is rarely found in the home, but if discovered on the premises, it should be destroyed. It is jet black, about a half-inch long, with longer legs than most spiders, and has a red hourglass figure on the underside of the abdomen.

Florida scorpions are not dangerous although the sting of

some species can be painful. The venom injected by the scor-



### BLACK WIDOW SPIDER

pion usually is insufficient to prove fatal to adults. However, the sting may be dangerous to infants. Scorpions normally live outdoors but may invade the home looking for insects and

will occasionally attack the occupant if molested. The body of the insect resembles a crab and may grow as long as two inches. In the tropics, species grow up to five or six inches. The insect has a fleshy curved tail with a stinger at the end.

The best method of control in the house is to eliminate all hiding places around the building and destroy by crushing with any heavy object any scorpion found in the house. Scorpions are drawn to an area where an outdoor light has attracted insects. If found far enough from the house to present no danger to humans, they should be left alone.

**CONTROLS** — 2, 6, 10.

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## TERMITES

There are two significant types of termites in Florida — the subterranean and the drywood. The subterranean, the most common, lives in the soil where it finds the dampness necessary for its existence. The drywood type lives in the wood itself, and never has contact with the soil. Both types feed on the common lumbers used in buildings.

It is improbable that you will see termites—except when they are swarming. At this time, they fly, lose their wings, and seek new homes. They should not be confused with flying ants (see Ants).

No wooden structure is completely safe from termites. Contrary to popular belief and the claims of some builders, metal



## READ THE LABEL

When using insecticides, **READ THE LABEL** and follow instructions. Read the small print on the back panel of the label. This is where you will find the government-approved statement of what insects the insecticide will control. You will find names of primary and secondary active ingredients and an indication of the type of base or carrier used. It will also carry the antidote and instructions on what to do in case the insecticide is accidentally consumed.

termite shields and treated wood used in the lower parts of construction do not completely protect a building from termite attack. Nor does pretreatment of the soil around and under the building guarantee against termite damage for more than a few years, unless backed by a written contract or bond. ANY building only a few months old may suffer a termite attack. Treatment with chemicals and periodical inspection are the only control in this case.

Subterranean termites travel from the soil to the wooden food supply through tubes made of mud and sand held together by an adhesive liquid which the termites excrete from their bodies. These tubes are about as thick as a lead pencil and run up a foundation wall or post to the wood. If a wooden portion of the building touches the ground, the termites may use the interior

of this wood for their passage-way.

Serious termite damage may be discovered by a sign of weakness or unsoundness of the structural part of the building. (Nails drive in too easily; siding falls off; shingles pull loose.) By the time these occur, the damage has been done.

We cannot recommend that the average householder, lacking equipment and experience, attempt to handle the job of eliminating his property of termite infestation. Pest control is big business and its operators are licensed by the State Board of Health. It is recommended that an expert be called to inspect the building long before things get to the point where the home is structurally weak. Most reputable termite control operators make such inspections without charge.

If the householder wishes to tackle the problem himself, he must eliminate the subterranean termites by cutting off access to the building by destroying the mud tunnels and chemically treating the adjoining soil. The food foragers in the timbers will die if they have no way to get back to the soil. Termites may be controlled by removing all

possible contact between soil and wood, and by saturating the soil around and inside the foundation, porches, posts, pillars with chemicals. A trench six to 12 inches deep, should be dug along all sides of the foundations and supports and chemicals poured into the trench.

**CONTROLS** — (subterranean) 39; (drywood) 40.

## TICKS

So far as the Florida housewife is concerned, ticks are associated with dogs. In some instances, houses have been infested with brown dog ticks but in any case, the trouble started with a dog whose infestation went unnoticed or uncared for.



Ticks, can be found usually around the dog's ears or toes. They vary in size and color, but can be identified as small bulbs or balloons attached to the dog's skin. (On rare occasions this can happen to cats or humans.) These pests must be removed with a slow pull and destroyed.

This is just the beginning. It must be assumed that the pet's sleeping area, indoors and out, is infested. It must also be assumed that infestation has begun in the house, if the animal has been there, because adult

### DOG TICK

ticks drop off the animal after having a blood meal and begin laying eggs. A vacuum cleaner should be used to thoroughly remove ticks, eggs and immature forms. Chemicals should be applied to baseboards, floors and wall cracks and other hiding places.

**CONTROLS** — (indoors) 4, 9; (yards) 13, 14, 15, 23; (on animals) 37, 38.

## OTHER INSECTS

There are many other insects in Florida. They may find their way into your home on rare occasions but in many instances they are out of their environment and have no intention of making their home with you. A swat or spray with one of the quick-kill aerosols will usually take care of the situation.

If the same kind of insect is noticed several times, or if the control measures suggested in this booklet do not seem to be effective, there are three things you can do.

- \* Contact your County Health Department and ask if there is someone on its staff who can give you advice on your problem.
- \* Write to the Florida State Board of Health, Bureau of Entomology, Box 210, Jacksonville, Florida 32201, and describe your trouble. You might wish to enclose a dead insect for proper and quick identification. The Bureau will do everything it can to help and it will send you additional information.
- \* You can contact a licensed, qualified pest control operator (this is often the best method of control). He knows about all kinds of pests and how to deal with them. He knows about insecticides and how to use them safely. It is possible that a call for help and the subsequent treatment will pay for itself in preventing damage to your building, and its contents; thus, relieving your peace of mind. We strongly urge this in case of termites. The householder who is qualified and equipped to manage his own termite problem is rare.

Additional information on insects discussed in this issue of **FLORIDA HEALTH NOTES**, or on many other insects not listed here, may be obtained by writing to:

Bureau of Entomology  
Florida State Board of Health  
P. O. Box 210  
Jacksonville, Florida 32201

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# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 5

1969

*The Welcomed Infant*

FLORIDA STATE LIBRARY



(Cover photo) A baby who is planned receives a warm welcome into the family . . .



. . . but unwanted pregnancies bring fear and unhappiness to many women. Economical and social problems arise when a family has too many children.

(Cover photo) A baby who is planned receives a warm welcome into the family . . .



. . . but unwanted pregnancies bring fear and unhappiness to many women. Economical and social problems arise when a family has too many children.

# *The Welcomed Infant*

The Clayton Edwards are expecting a baby!

They are hoping for a boy because they already have two girls — Sharon, age six, and Polly, age three. They now feel they are ready for a third child. Clayton is doing well in his work and the Edwards know they are now economically able to have a third child.

Shortly after they were married, some nine years ago, Mr. and Mrs. Edwards went to their physician and learned how to plan their family. They felt that by planning their family, they were offering their children a better home than parents who blithely or unwittingly were contented to let nature take its course.

The Edwards had purchased a comfortable home in a quiet neighborhood. They were able to give their children good food, plan for their education, and enjoy a few luxuries. During the past summer, the family was able to take a vacation to the Far West.

Because of planning, the Edwards are able to assure their new baby that he will be adequately fed, clothed and educated. Because his arrival is planned, he will have a better chance for good health. His parents are making sure their physical conditions are adequate. Since there is good medical supervision, health problems will be minimized. Preparations are being made for the birth itself with competent care at the local hospital.

The baby will be certain of a welcome — itself a desirable start in life. He will be in the position of an invited dinner guest, as contrasted with a visitor who just drops in. The invited guest is assured of a meal; the uninvited may get fed only at the expense of someone in the family.

## *The Unwelcomed Baby*

Mr. and Mrs. Joseph Rogers, who live in the same town, are also expecting a new baby. But with five children in their little home, they are not really happy about a sixth mouth to feed; although to their friends and relatives, they put on cheerful and expectant faces.

Mary Rogers is emotionally disturbed. She thinks of the cost of milk for the children, of the housecleaning and laundry, of the sweep of children's diseases through the family, of sewing and mending and hand-me-downs.

Joe likes the attention that a new infant brings, but the jokes that make the rounds of the shop where he works are getting a little tiresome. He originally helped around the house. He built shelves and cupboards to make the housework easier. He helped with the children and was tender with Mary.

But now she flinches at the touch of his hand, moves away from him, and speaks sharply out of sheer nervousness. She is beginning a habit of nagging and scolding — both Joe and the children. Joe is beginning to stay out late and some of his excuses are pretty thin.

The house is not receiving the care it needs. There are piles of items used as toys and worn clothes all over the house, even in the kitchen. The exterior needs painting; there is no lawn. There is no privacy — no room for a sixth child.

There is little money left over after paying the bills — hardly enough to feed the family. The family automobile needs replacing and the whole family's living standard suffers because there is not enough money to go around. The Rogers don't know what to do; they are miserably frustrated, and unfulfilled. There are just too many in the family.

## *The Answer to the Unwelcomed Baby*

The Edwards know the answer to the Rogers' problems. They were fortunate in finding the solution early in life and taking steps to limit their family. Why is family planning important? It is known by many names — planned parenthood, child spacing, birth

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### FLORIDA HEALTH NOTES

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Most American women believe that the ideal number of children is three or four.

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control — but the results are lasting and desperately needed in this complex, crowded world.

When the Edwards and Rogers started their married lives, both families were inexperienced in how to raise a family. Their lives were dotted with small islands of prejudices and superstitions. The Edwards were able to chart their course by the available advice of others — especially in the raising of their family. They took the advice of their physician. Nothing in their lives was to be more important to themselves, or to society than their parenthood. And they applied the same intelligence and foresight in determining the number and spacing of their children as they did to designing a home, buying furniture, and planning a vacation.





How many children they would have was a personal decision. However, family, friends, physicians, spiritual advisors, educational systems and books served to supply principles and information. The Edwards used these factors to make their decisions. The Rogers trusted to luck and failed to find the answer to their problems and ended up with more children than they could care for.

Mary Rogers was ridden by fears of unwanted pregnancies. She was worn out from having too many children too close together. There were more dangers of the babies being born premature or mentally retarded. She knew she was not well and that she was unable to care for more infants. The restrictions and prejudices of their cultural backgrounds forbade the discussion of sex and the exploration of how to space their children.

## *Standing Room Only*

Family planning is necessary. Planners say that by the year 2000, there will be over seven billion people on earth at the present rate of increase, and in 500 years there might be standing room only. It took mankind from the beginning of recorded history to about 1850 to reach a population of one billion; the second billion was reached in less than 100 years, and by 1975, there probably will be four billion persons on earth.

The world may be disastrously overcrowded in a few decades. Florida will be no exception. The state was sparsely settled in 1910 with only 753,000 persons. In 1965, there were 5.8 million; by 1980 there will probably be eight million, and there may be close to 13 million in the Sunshine State by the year 2000.

Seventy per cent of the present population live in 11 counties with the most crowded areas being the counties along the Gold Coast (Dade, Broward and Palm Beach); Central Florida (Polk, Orange, Brevard and Volusia); and the Central Gulf Coast (Pinellas and Hillsborough). The other two counties are Duval, in the northeast; and Escambia, in the western end of the Florida Panhandle.

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A congested expressway during the rush hour shows that overcrowding is already with us. If the present population rate continues, there may be standing room only on earth in another 500 years.

Florida's booming growth can create most difficult problems during the next 10 years unless planning and foresight are put to use. Problems already rearing their heads include pollution, dwindling water supplies, urban congestion and growing slums.

## *More Can Mean Less*

Traditionally, Floridians associate population growth with increases in profits, prosperity and general well-being. But the population can grow to a point where there is regression, and instead of more food, prosperity and opportunity, there will be less food, space and chances for a better life.

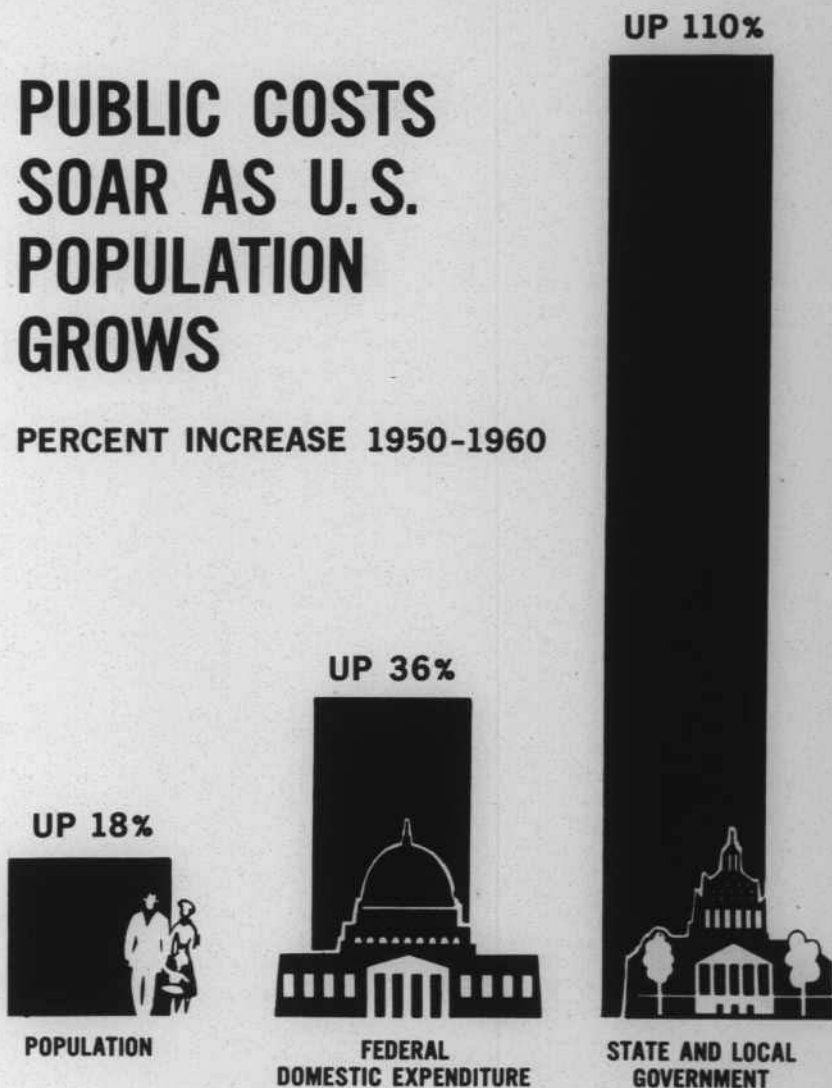
We may say that this could be true in foreign lands and under developed countries today. But it might also happen in Florida. Floridians are bound to other people around the world politically, economically and morally. Wars in distant lands cast long shadows down the streets of Miami, Jacksonville and Cocoa. While our government and private business help spur the economic growth of other countries, the small gains achieved each year are eaten away by the millions of new mouths. The end products for the world — and perhaps in the future for Florida — are more poverty, hunger, illiteracy and bitter unrest.

Overpopulation can cut down the amount of food available to support added billions of people. Few Americans starve to death, but one-fourth of the country's population, at the present time, cannot afford a really adequate diet. Public health officials and persons interested in the population explosion are concerned that two-thirds of the world's population are undernourished. One study estimated that the production of food would have to be doubled to provide an adequate diet for the existing population. Even such catastrophes as famine or a nuclear war will not make serious inroads into the problem unless birth control becomes a way of life for all people of the earth.

Overpopulation will cut down on the availability of land. Florida now has large expanses of unoccupied land but in a few decades, these may diminish. Sprawling subdivisions of private homes and industrial complexes will greatly reduce farmlands around Florida's cities. Express highways and rapid transit systems will carry peo-

# PUBLIC COSTS SOAR AS U.S. POPULATION GROWS

PERCENT INCREASE 1950-1960



A small increase in the population of the United States creates tremendous costs in all levels of government.

ple further into rural areas. Land once remote from the cities will be devoured by growing megalopolises.

Overpopulation will increase the lack of opportunities in education and careers. Each year thousands of new classrooms are needed to meet the demands of the growing population. Colleges

and universities find that more students are seeking admission. Where a limited education was once needed to make one's way in the world, a person today has to have high qualifications to obtain the best positions. School dropouts and unskilled laborers are finding it increasingly hard to find any kind of employment in the labor market in this sophisticated world.

## *Patterns in Family Planning*

The choice of whether to have children or not is not an easy one. In the natural course of events, men and women have children without any extra effort on their part to produce an infant. The biological make-up of the body is such that the pleasures of sexual intercourse may be followed by pregnancy, whether or not it is convenient for the people involved — or desirable. Thus the specie is perpetuated, making many prospective parents happy. Other couples may be considerably less than happy.

Some experts in family planning say that eight out of 10 American couples practice some form of family planning. Still the population is growing by two million babies a year. When the "baby boom" babies of the 1940's marry and start to have children, the population will in-

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A much happier pattern of living can be enjoyed by the family who plans its children.





crease even more rapidly. In the United States the problem of having unwanted children is found largely in the lower socioeconomic portions of our society.

In the middle and upper income portions of our society, the knowledge, means and methods of limiting families are well known. Like the Edwards, many

informed parents plan to have only children whom they can support and love.

Family planning had a fairly recent origin in Western civilization, beginning during the early 19th Century. Interest in contraceptive techniques was renewed early in this century. While the more common meth-



ods of contraceptives left much to be desired, they did make it possible for couples to control the size of their families. In urban areas, the better informed and more prosperous representatives of the working groups took up family planning with considerable interest.

In the minds of most American women, the ideal number of children in a family is three or four. All young women seem to want the same number of children. However, those of the higher socioeconomic level tend to learn quickly about family planning and thus limit the number of their children. Young women of the lower socioeconomic level have the same inspirations but over a period of time they find themselves with more children than they thought they would have. This is the major problem facing public health officials and voluntary agencies interested in family planning.

Families like the Rogers have little preparation in finding the answers to such problems as "how to plan the number of children?" There is a decided gap in their sex education, or they have little formal education. Or, their religious beliefs prohibit the use of artificial contraceptives and they do not understand the rhythm method.

The Rogers came from the same cultural background. They knew very little about sex relations. They were acquainted for about a year before they married. Mary was pregnant with their first child at the time. Nearly every year since then there has been a new baby. Mary has come to look upon sexual relations with a lack of enthusiasm and merely as a means to end Joe's pleading for her to be "nice to him."

It is said that the "rich get richer and the poor get children." The Edwards were finding a happy life with family

### Private Agencies

There are several private agencies in Florida which are affiliated with Planned Parenthood-World Population, a national organization carrying on education and clinical services in family planning. Some of these agencies assist public health clinics in different ways—by providing uterine devices or pills for patients, helping to staff clinics with physicians, nurses and/or clerks; and helping to set up child spacing services in a community. In some areas these agencies operate birth control clinics for indigent patients.

planning. The Rogers were having more children and getting poorer. But the old saying need not be true any longer.

In Florida, the woman who cannot afford to go to a private physician, need not go without family planning information. This is available from County Health Department clinics. The Florida State Department of Public Welfare also furnishes family planning information to welfare recipients; and social workers refer parents to County Health Department clinics or private physicians.

Taxpayers and their governments must take an interest in family planning. It is their dollars that go to support many unwanted children. From July 1, 1967, to June 30, 1968, Florida families, with 160,835 dependent children, received \$26.6 million in federal and state money. This is 25 cents of every public as-

sistance dollar spent in the state. Not all of these children were unwanted, but their families did not have the resources to care for them.

It is also the families who cannot support themselves that have the most of the public health problems. They have the highest rate of venereal disease, tuberculosis and other communicable diseases. They live in substandard housing, are frequently out of work, often on relief, and are more often involved in crimes. They are often the recipients of charity and they are the ones who benefit from money raised by voluntary agencies. These lower socioeconomic families' need to remove themselves from the plight of poverty and family planning is one step in this direction. Today's society has many responsibilities to help these families break the chains of misery.

## *Beginning the Pregnancy*

To better understand birth control, it is necessary to have a clear idea of the process that leads to the conception of a baby — the union of the male's sperm and the female's egg that starts pregnancy.

The man's sperm is produced in two sex glands (testes) located in the sac-like scrotum. There are 400 million sperm in

every teaspoonful of male fluid. Each microscopic sperm has a head propelled by a swift lashing tail.

When the average girl is 10 to 13 years old, menstruation or monthly bleeding begins. An egg (ovum) grows in her ovary and passes into the Fallopian tubes leading to the uterus (womb) about two weeks before

the menstruation takes place. This is known as ovulation.

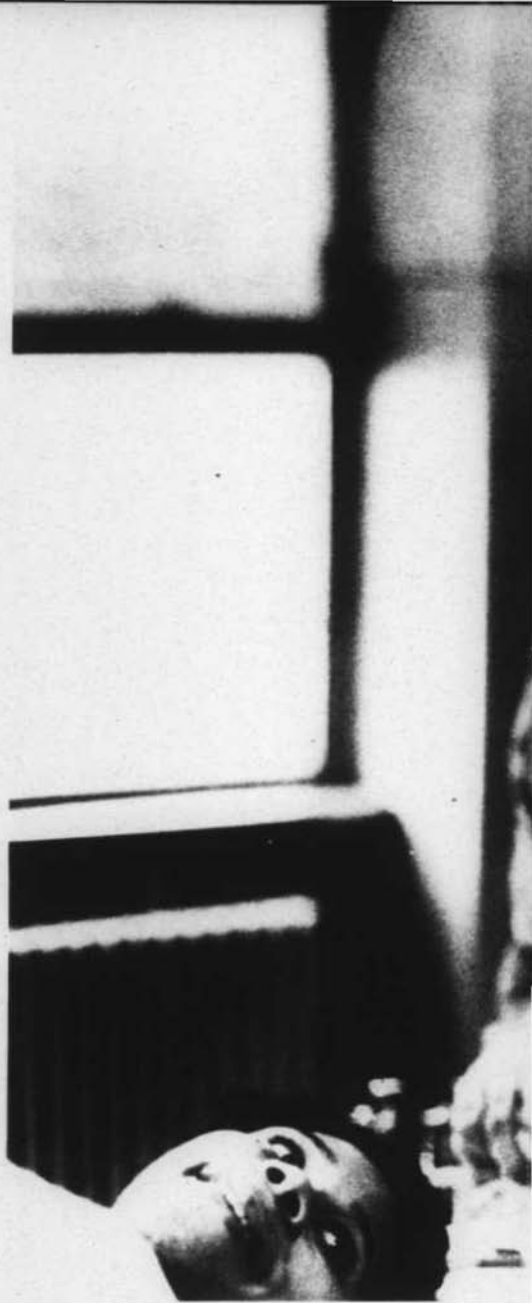
During sexual intercourse, the man deposits the approximate equivalent of a teaspoonful of semen in a woman's vagina (birth canal). While only one sperm is needed to fertilize the egg, millions seem to be required to penetrate the womb and thus enable some of their number to move into the Fallopian tubes where an egg cell may be waiting. Once in the tube, the sperm has the power to fertilize the egg as long as 48 hours.

The woman usually develops and releases one egg cell a month from one of her two ovaries. On the way to the uterus, the egg cell passes into the tubes where it can unite with the male sperm. Meanwhile, certain female hormones prompt the lining of the uterus to form new tissues to receive and nurture the egg.

If the egg cell is not fertilized, it remains active for about a half day. It cannot implant itself in the uterus and soon breaks up. With the uterine lining which is not now needed, the egg cell is passed off in the next menstrual period.

Because of this birth process, a woman can conceive only during a limited time about half way in her menstrual cycle. The "fertile period" consists of the

days before ovulation when the male sperm can survive in the tubes, plus the half day the egg cell is active. This period varies from woman to woman and from





month to month so it is extremely difficult to set the time of the fertile period with certainty and reliably know the infertile period for sexual relations.

A planned infant is the result of a love between a husband and wife. Such an infant is usually born with the best medical attention.



## *Contraceptives*

Man's attempts to control the increase of his offsprings reach back into the dim past so far that it is impossible to discern their real origin. Since ancient times, the main population checks were war, epidemic, famine, child mortality and human sacrifice. Infanticide, the killing of children, and crude abortions were the rules among many tribes. Drugs, operations and witchcraft were used to cause sterility by artificial means. Today public health and science have lowered the death rate and other population checks are less effective. And the population is increasing at a rapid rate.

Modern methods of contraception were developed within the last 100 years. Oral contraceptives, intrauterine devices, diaphragms, cervical caps, condoms, coitus interruptus (withdrawal) and rhythm are methods acceptable to most medical and public

health organizations. Most contraceptives differ from surgical sterilization and induced abortion in that they prevent the meeting of the sperm and the egg cell so that pregnancy cannot take place. The oral contraceptive is also different but more will be said about this method later.

The most important thing in the use of contraceptives is the acceptance by the patient. The level of education, degree of available privacy and sanitary facilities, basic attitudes about fertility, and sexual practices play a big part in the successful use of the contraceptive method chosen by any couple.

In interviews with the patient, the physician must determine whether or not the patient is likely to use the given method conscientiously and that the method is satisfactory.

### *Oral Contraceptives (The Pill)*

As mentioned above, there are several ways of avoiding pregnancy. Most man-made contraceptives set up a mechanical or chemical barrier to block the union of the sperm and egg cell. But the pill is different.

When a woman becomes pregnant, the fertilized egg settles into the lining of the uterus and begins to grow. Additional eggs must not descend from the ovaries into the uterus to compete with



**A public health worker explains birth control methods to a patient. Over 43,000 women received family planning services in Florida's public health clinics in 1968.**

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the developing egg. The woman's ovaries send a message to the brain to stop sending out hormones which trigger the egg cell production. These messengers are hormones — progesterone and estrogen.

The contraceptive pills imitate the action of these natural hormones. Tiny amounts of chemicals are used to signal the section of the brain that stimulated the egg production to stop. These restrain the production of eggs temporarily so no egg will descend into the uterus. The pills are taken for a prescribed number of days. If a woman fails to take the pills regularly, or as scheduled, the ovary will start producing eggs again.

**Oral contraceptives are available only on prescription and should be taken under a physician's direction.**

Physicians prescribe the pill (or they prescribe it only with special precautions) for women who do not have a history of cer-

tain conditions: suspected or known liver trouble, kidney disorders, hypertension and a history of illness, such as breast cancer, uterine cancer or blood clots.

This method of birth control, when used as directed, is considered to be effective. However, if the pills are started late or are not taken as prescribed, chances of pregnancy are increased. The instruction given by the physician and/or nurse must be followed very closely.

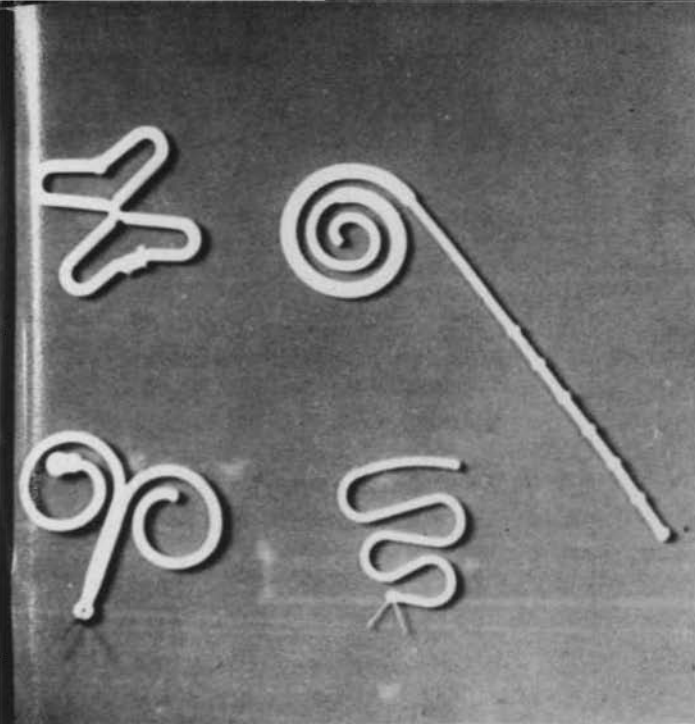
A few women experience some side effects similar to those of early pregnancy. These usually do not last long. Careful scientific studies for more than a decade have failed to show that the pills cause any permanent effects. The pills will not cause cancer, nor do they affect the ability of women to have future children once they have stopped taking the pills. Oral contraceptives are approved by the U. S. Food and Drug Administration before they are allowed to be prescribed.

## *Intrauterine Devices (IUD)*

Intrauterine contraceptives are small, plastic or stainless steel coils, rings and loops, about the size of a large paper clip, and in a variety of shapes and sizes which, when placed inside the womb, can serve as an effective method of birth control. These devices have been under study for many years and are determined to be quite safe. While the devices do not always give 100 per cent results, they are among the most effective means of birth control available.

Once a physician has placed the device inside the womb, it is left there, requiring little attention and providing protection against unwanted pregnancies. It is not known exactly how they work, but one theory is that while the device does not prevent fertilizing of the egg cell, it does prevent its nesting in the uterus and starting to develop into a baby. The woman checks the nylon thread from the device in the vagina to be certain of its presence.

Some women have noticed cramps for a short time following the insertion of the device. There may be other side effects, such as heavier menstrual period and bleeding or spotting but these



One of the small plastic intrauterine devices, when placed in the womb by a physician, gives assured birth control and requires little further attention.

complaints usually disappear after a few months. When pregnancy is desired, the device may be removed by a physician. The use by no means affects future children or the ability to have them. Like the oral contraceptive, intrauterine devices must be prescribed by a physician.

## *Diaphragms and Cervical Caps*

Both the diaphragm and cervical cap must be prescribed and fitted by a physician. The **diaphragm** is a shallow cup of flexible rubber stretched over a collapsible metal ring. It is placed in the birth canal and covers the cervix (entrance to the womb). The method is safe; and because it was considered most effective, the diaphragm was widely recommended by physicians for many years before the availability of oral pills and intrauterine devices.

The **cervical cap** is another vaginal appliance made of soft rubber which is placed directly over the cervix like a thimble on a finger. Although the physician will instruct his patients in the method of using the devices, the main disadvantage to the cervical cap and diaphragm is that many women find it difficult to master the technique of capping the cervix which lies deep in the vagina.

Diaphragms and cervical caps must always be used with a contraceptive jelly or cream that serves as an additional protection and a lubricant. These jellies contain chemicals which quickly kill the sperm.

These contraceptive aids may be put in place at any time up to six hours before sexual relations and must be left in place for at least six hours afterwards. The diaphragm may be worn up to 24 hours after which it should be removed, washed and dried.

## *Other Birth Control Methods*

There are a number of birth control methods recommended by public health officials and private physicians which do not require a doctor's prescription. These are sold at drugstores, but for the desirable method, the individual should consult his or her physician or public health clinic.

**Special contraceptives, jels, creams and vaginal foams** are simple and do not require a doctor's examination. They are sold with special applicators which measure the right amount to be used. These products are recommended for couples who cannot use other methods, or for women who cannot get to a physician. To be effective, they must be used every time **before** sexual relations. To act alone, the cream or jel contains a powerful sperm-killer and must spread a fairly long lasting film over the surface of the vagina.

**Vaginal suppositories** are small, solid cones containing a chemical in a material which melts at body temperature. When moistened and inserted, they distribute a thick sperm-killing foam that creates a mechanical, as well as a chemical barrier.

The **condom** or "rubber" is designed to be placed over the male organ (penis) just before sexual relations. It is safe and reliable but there is a slight possibility that it might break during use or slip off with the result that the male fluid may be spilled into the birth canal.

All of these contraceptive devices, jels and creams are available to rich and poor alike. While the cost of having a physician fit some birth control devices must be considered by some families, or the indigents, most of the foams, jels and creams are available for only a few cents at drugstores. The oral contraceptives and intra-uterine devices are available only from physicians or family planning clinics of County Health Departments.



## Illegitimate Births

There were 13,768 illegitimate births in Florida in 1967. Of these births, 5,494 were to girls 18 years of age and under. Since out-of-wedlock pregnancies are increasing among teenagers, emphasis needs to be placed on programs to reduce pregnancies among these girls.

One sociological study, which followed the progress of 100 girls who had their first out-of-wedlock baby before they were 17 years of age, found that in a period of five years, these 100 girls gave birth to 340 infants. The problem in Florida is concentrated in a few thousand girls who first become pregnant when they are 14 to 15 years of age. By the time they are in the late teens or early twenties, they have had several children out-of-wedlock and are on welfare.

Schools to help these pregnant children to continue their education have been set up in five Florida counties. By helping them to continue their education and plan for the future, public health and school officials hope that the continued reproduction of illegitimate offsprings, dependence on welfare, and absence of a normal family life can be prevented.

The **rhythm method** is the only method of family planning approved by some religious groups. This method is based on the fact that a woman can become pregnant only during that time of the menstrual cycle when the egg is released from the ovary — usually 12 to 16 days before her menstrual period.

To avoid conceiving, she and her husband abstain from sexual relations, not only during this fertile period, but also for three or four days before and afterwards to insure against error. If the woman's menstrual cycles are not too irregular, it is possible to estimate the safe and unsafe days with fair accuracy. If the woman's periods are irregular, the safe and unsafe days will also be irregular. Illness, shock or other changes can disturb the menstrual cycle and upset the calculation of the time of ovulation.

Because of these problems, the rhythm method may be unreliable for many women. If it is to be used, the woman should consult with her physician who will help work out the safe period.

The **vaginal douche** is not a means of birth control — although many people believe it is. The method consists of washing out the birth canal with a solution of one kind or another in hopes of re-

moving the sperm. But the sperm is usually forced further into the uterus. Products frequently sold as aids to "feminine hygiene" may not give the protection desired. Many women use them in the mistake that they will prevent pregnancy.

Another less effective method of birth control is the **withdrawal** (coitus interruptus), which calls for self control on the part of the male partner. During the sexual act, the man must withdraw from the woman's vagina just before reaching his climax. While this method has been practiced in many cultures since history began, it is ineffective because of the dangers of the semen being injected into the birth canal despite the care taken by both partners.

**Voluntary sterilization** is sometimes used where conception could produce physical damage, or when the physician feels that the pregnancy would be dangerous to the life of the mother and health of the child, or when a serious medical problem makes another pregnancy harmful. A husband or wife, who has an affliction that the children could inherit, may ask for sterilization. Sometimes, parents ask for this method when they have completed their families and another child would be a burden.

Sterilization once was a permanent operation performed on either the husband or wife. For a woman, sterilization required an abdominal operation and hospitalization for several days. It is a simple operation on the male and may be done in a doctor's office.

A new device, the Jhaver clip, which if found successful, would greatly increase the acceptability of male sterilization in underdeveloped countries. The clip is a crescent-shaped bit of metal which is applied to the sperm tubes of the male in a single-incision operation which leaves the tubes themselves uncut. The clip blocks the passage of sperm while it is in place. If restoration of fertility were desired, the clip could be removed in a few minutes, under local anesthesia, and the sperm tubes would be free once more.

## *Child Spacing Services in Florida*

For many years the State Board of Health has supported child spacing services as a part of a complete public health program offered through the maternal and child health clinics in the County Health Departments. The State Department of Public Welfare also



A public health nurse conducts a class in family planning in a hospital's maternity ward.

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has established a policy in which recipients of public assistance are referred, if they wish, to County Health Department clinics or private physicians for family planning services.

The Florida Medical Association, in 1942, encouraged physicians to offer child spacing advice to their patients when based upon medical need. The Association also asked that such services and advice be offered in public health maternity clinics operated by the State Board of Health through the County Health Departments. Because local health departments are combined efforts of the boards of county commissioners, county medical societies and the State Board of Health, establishing of family planning programs in each of the 67 counties involved the participation of all groups.

Most child spacing services provided by the State Board of Health and County Health Departments are given through clinics in county hospitals or through public health clinics. In all cases sound medical practices are followed with a thorough evaluation, determination of the patient's desire in regard to the contraceptive to be used, and a series of cervical smears to rule out the presence of cervical cancer.

Every effort is made to strive for a healthy baby whenever a pregnant woman comes to the public health clinic. While she is being given maternity care, the mother is given the opportunity to participate in child spacing, if she asks for it. The service is provided for the woman who cannot pay, as well as the patient who wishes to make a small contribution but cannot afford the full cost of private care. Contraceptive services are also offered to other than post-partum patients.

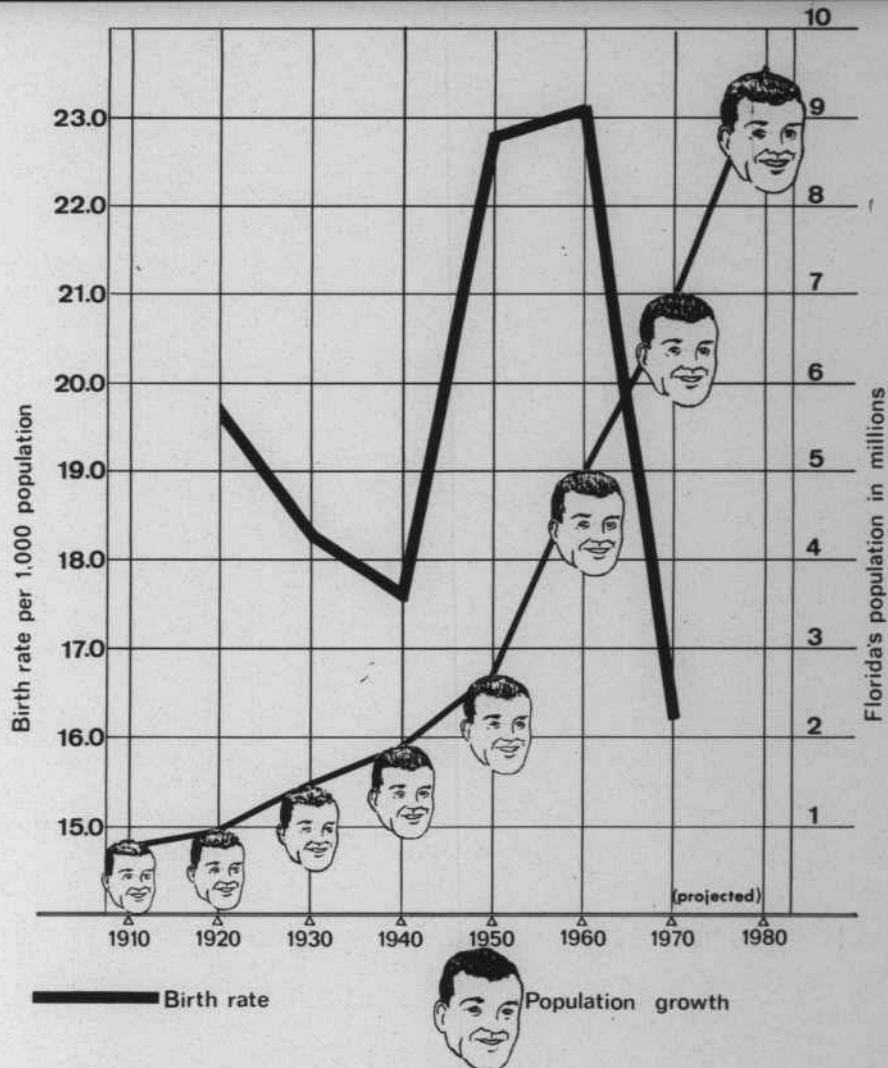
Every effort is made to involve the husband in family planning. The couple is urged to agree on a method. The woman is interviewed by the public health nurse prior to the physical examination and attends pre-examination classes where she is given the facts on family planning by a health educator or the public health nurse.

Many women of the lower socioeconomic groups have taken the opportunity to plan their children. During 1968, 43,682 indigent women were provided family planning services — out of an estimated 219,000 indigent women of childbearing age in Florida. Many women were able to obtain child spacing services in the larger counties because more clinics were opened and evening clinics were made available for women who were employed, dependent upon their working husbands for transportation, or who had no one with whom to leave their children.

In some areas of the state during the past year, there were fewer births among welfare recipients and fewer maternal deaths among indigent women. Health officials feel that reasons for the drop in these births and deaths lie in the work of the family planning clinics.

## *The Key to Progress*

Family planning is the key to progress in our world. Leaders of most governments and private citizens endorse family planning. Birth control is a private, personal matter which cannot be imposed on anyone. At the same time, no group or organization should at-



While Florida's population has continued to climb since 1910, the state's birth rate has dropped sharply since 1960. The State Board of Health believes the decline is due to modern contraceptive methods and a socially and economically affluent society. The low birth rate of the 1920s and 1930s was partly due to the economic depression of the time. World War Two contributed to the rising birth rate of the 1940s and 1950s.

tempt to deny child spacing information and services to others in the community who want them.

With the freedom to choose to bear or not to bear a child lies the responsibility of caring for a child who is born. However, con-



traception must not be an excuse for immature, improper or empty use of the sexual act.

A sociologist claimed recently that one-sixth of the brides in the United States are pregnant at the time of their marriage. It is necessary to help young people understand that sexual relations should be an intimate communion between a husband and wife. No child should be allowed to come into this world unwelcomed or unwanted. Any couple who is contemplating marriage should have an accurate knowledge of sex, contraceptives and family planning before they become parents. Young people should know about the responsibilities of finishing school, getting the jobs they want, marrying and establishing their home, taking time to know each other, and having fun together—before having their first baby.

Florida parents have the opportunity to decide whether they want to live like the Edwards — or the Rogers. Family planning gives parents of every economic and social level a chance to choose when they want their children and thus plan for a rational and rewarding life for themselves and their children.



Am I welcomed? What kind of future do I have?

(Illustrations pages 113, 114, 118, 121, 122-123, 126-127, 138 courtesy of Planned Parenthood-World Population.)

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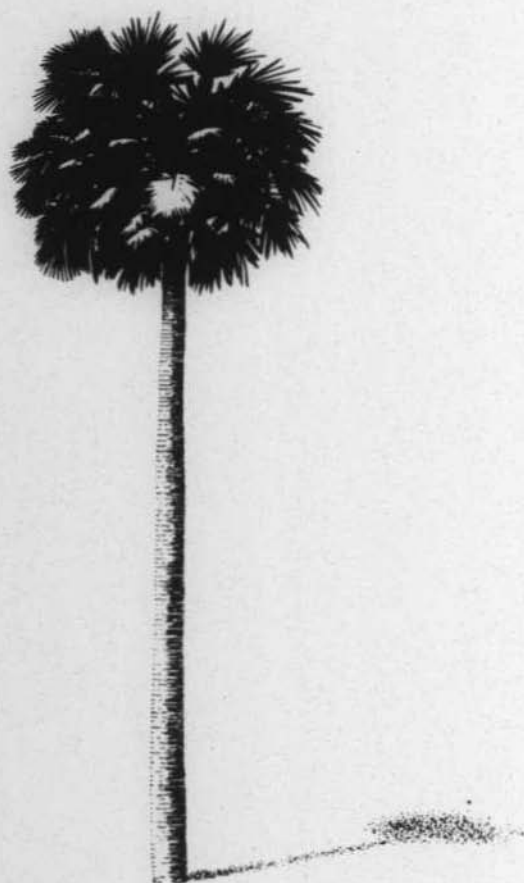
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# FLORIDA HEALTH NOTES



1968

VOLUME 61—NO. 6  
JUNE 1969

**A Year's Report - 1968**

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# 1968

# JAN

SUNDAY	MONDAY	TUESDAY	W
<p><b>A Year's Report—1968</b></p> <p>We live by the calendar. We play, work, go to church on special days of the week. At certain times we have holidays, vacations, birthdays. We have calendar years which run from January 1 to December 31. Fiscal years differ in that they are accounting periods which span 12 months other than calendar years. For example, the State Board of Health's fiscal year runs from July 1 to June 30.</p> <p>This issue of <b>Florida Health Notes</b> presents a condensed version of the 1968 <b>Annual Report</b> of the State Board of Health</p>		2	
		9	

# 14

against a background with which we are all familiar. The state health agency and its partners, the County Health Departments, are ready every day of the year to protect your health, the health of your family and your community.

# 21

Since its inception, the State Board of Health has waged and won battles against such diseases as typhus, malaria and yellow fever. It has fought tuberculosis, hookworm and many other diseases with great success.

# 28

Poliomyelitis has faded from the Florida scene as an epidemic threat. Measles reached its lowest peak in 1968; and whoop-



# JANUARY

# 1968

DAY

THURSDAY

FRIDAY

SATURDAY

# 6



Many children were examined during the year by public health physicians in maternal and child health clinics.

# 18

ing cough and tetanus became relatively "minor" diseases.

# 25

However, 1968 was a mixture of successes and problems. Influenza raged over much of the state and there were more than 29,000 reported cases. Malaria came out of the past; heart disease took many lives; the number of cases of rabies and hepatitis rose. Legal enforcement of health rules and regulations was often unpleasant, but where the health of the people of Florida and the well-being of the elderly, the innocent, or the unsuspecting is concerned, the State Board of Health took necessary steps.

1968

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TUESDAY

**Mothers and Children**

A basic public health program is the giving of medical care to mothers and infants through various clinics. One of the State Board of Health's newer programs, family planning, continued to grow in 1968.



6

Florida had 112 reported cases of rabies in wildlife in 1968 — mostly in raccoons. This was an increase of 30 cases over the previous year.

**FLORIDA HEALTH NOTES**

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VOLUME 61—NO. 6

JUNE 1969

# JANUARY

# 1968

DAY

THURSDAY

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SATURDAY

More than 43,680 indigent women availed themselves of child spacing services provided by County Health Departments during the year. This was an increase of 37 per cent over 1967. There were some 219,000 women of child-bearing age in the lower socioeconomic group in Florida. It is in the interest of society and these women who

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cannot afford to have so many children that they receive knowledge of child spacing and have the same opportunity for modern contraceptive methods that are available to women who seek private medical care.

The pregnant school girl was becoming more of a problem. During 1968 schools were started by boards of education in Dade,

Palm Beach and Sarasota Counties so these girls could continue their education. More schools are being planned in other counties.

17

Florida's five Maternity and Infant Care Projects, which served North Broward, Dade, Orange, and Palm Beach Counties, and 13 counties surrounding the University of Florida, served to identify mothers who had developed complications of pregnancy and would have premature deliveries. These births often produced infants who were susceptible to brain damage, neurological disabilities, and mental retardation. The Projects were designed to demonstrate that high quality care can be furnished mothers and children who are unable to obtain private care for reasons beyond their control.

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1968

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The number of midwives decreased by 13 and Florida had a total of 135 by the end of 1968. For the first time there were no new applicants for midwifery licenses.

Fifteen orientation programs on mental retardation at six Sunland Training Centers were conducted by a public health nurse and attended by 344 professional workers, in-

cluding public health nurses, teachers in special education, social workers and vocational counselors.

The Migrant Health Project, which was started in 1962, provided family medical, dental and nutritional services to migrant laborers and their families in 13 counties. Sanitariums assigned to the Project worked to improve the housing and environmental conditions of these workers.

12

### Nutritional Services

Diet counseling and advice on normal and therapeutic diets were given to women and children in 44 counties. Some 12,437 mothers and children were given direct nutritional

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services, a seven per cent increase over 1967.

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Lofenalac, a special food, was distributed to 43 children who were under dietary treatment for phenylketonuria (PKU), a condition which causes mental retardation. This

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# 1968

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THURSDAY

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SATURDAY

7

condition was easy to diagnose by a blood test of the infant shortly after birth.

County Health Department and regional nutritionists interpreted commodity food programs to individuals and families, community leaders and County Health Department staffs. Demonstrations were presented



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Nutrition counseling was given to 12,400 mothers and children during 1968.



# 1968

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WE

Measles were at an all-time low but an epidemic was starting in Jacksonville at the year's end.

# 7



to recipients of commodity foods in 13 counties to encourage the recipients to use the foods.

## Communicable Diseases

Measles, the childhood disease, reached a new low mark in Florida during 1968 with 534 cases — one quarter of those reported in 1967. Widespread measles vaccine campaigns waged throughout the state were held responsible for the low figure. Over 49,500 children were immunized in 14 county mass measles eradication programs. As the year ended, a measles epidemic was beginning in Jacksonville and plans were

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THURSDAY

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underway to carry out an "End Measles" campaign. This will probably be the last measles epidemic Florida will see.

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Pertussis (whooping cough) and tetanus (lockjaw) were two diseases which were on the downward trend. There were 98 cases of whooping cough, as compared with 271 in 1967. Immunizations with pertussis vaccine and increasing attention to early inoculation of infants were believed responsible. Only 11 cases of tetanus were reported in 1968, as compared with 24 the previous year. This unnecessary disease can be eradicated with vaccine.

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A total of 1149 cases of infectious hepatitis was reported in 1968, an advance over the 639 listed in 1967. Only scrupulous personal hygiene and conscientious hand-washing by everyone can alter the recurring cycles of the disease. The infection is caused by transmitting feces to the mouth after using the toilet and failure to clean one's hands.

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The year 1967 set a new low in diphtheria cases; but 1968 provided an "epidemic" year with 16 cases throughout the state and two deaths in Madison County.

# 1968

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY
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**Hong Kong flu** was identified in June 1968 and spread throughout the world, including Florida. The first case was identified in Tallahassee, and the first "group" epidemic occurred at Jacksonville University. Over 29,350 cases of influenza were reported — 18,000 in the first three months of the year,

and 11,000 in October-December. Many thousands of cases went unreported.

**Malaria** came back from history with 25 new cases, all in servicemen returning from Vietnam. The State Board of Health took special note of these cases as the mosquito capable of spreading malaria still resides in Florida and one undetected case could infect local mosquitos.

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## TB and VD Control

Tuberculosis control found 1620 new active cases. State 70mm X-ray units made 172,791 examinations and turned up 112 new

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cases; county units made 800,218 examinations and found 7498 persons who were suspected of having TB. The examining of contacts of new cases of active TB was fruitful for additional cases. County Health Departments identified 14,488 contacts, examined 13,432, and found 137 persons with

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1968

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THURSDAY

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SATURDAY

active TB. Some 7850 persons were started on prophylactic drug therapy.

Veneral diseases continued to make themselves felt in public health. Gonorrhea grew to epidemic proportions with 50,850 reported cases. Florida had a 17.4 decrease in 1968

4

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The State Board of Health certified 227 ambulance companies, 484 vehicles and more than 2000 attendants during the year.



of the number of reported cases of primary and secondary syphilis — as compared with 1967. The drop of 1595 reported cases in 1968 from 1933 the previous year follows a substantial and dramatic rise over the period of 1957 to 1965: Miami, Jacksonville and Tampa contributed more than 40 per cent of all cases.

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1968

SUNDAY

MONDAY

TUESDAY

**Laboratory Services**

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The State Board of Health laboratories performed over three million examinations, an increase of 6.1 per cent over 1967. Noticeable increases were in syphilis serology, nose and throat cultures and gonorrhea smears. The Guthrie test for PKU continued upward from 44,648 tests in 1966 to 61,003 in 1968. The 1965 Legislature passed a state law making the State Board of Health responsible for promoting the PKU testing of all infants. Physicians are becoming more aware of this program and are screening more newborn infants.

9

The 1967 Legislature passed the Clinical Laboratory Law and the State Board of Health was made responsible for registering laboratories and licensing personnel. A total of 467 laboratories was registered; 3626 personnel were licensed under the new law.

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**The Elderly and Indigent**

Florida's elderly population continued to grow and the medical care of these people

who are caught between fixed incomes and the high cost of living and rising medical expenses is becoming a problem.

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There were 370 facilities for the aged, with 27,573 beds, inspected by County Health Departments and licensed by the



SDAY

THURSDAY

FRIDAY

SATURDAY

6

State Board of Health. Of these, 290 were nursing homes, 66 were homes for the aged, and 14 special service homes. Residential-type homes for the aged were also becoming part of the nursing home program.

A total of 192 hospitals was inspected and licensed by the State Board of Health. There was a trend toward eliminating substandard



15


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institutions and replacing them with new facilities.

Some \$7.3 million was spent under Hospital Service for the Indigent, a county-state program, and the federal-state supported Public Assistance Recipient program of hospitalization. These programs increased 12.8 per cent over the previous year. The

Vital statistics played an important role in public health. The State Board of Health recorded 100,971 births in Florida in 1968.

# 1968

SUNDAY	MONDAY	TUESDAY
	Over three million examinations were performed during the year by State Board of Health laboratories.	
7	8	

average per diem rate for the participating hospitals was \$40.22 at the end of the year.

About 60 home health agencies provided home health services in some 50 counties. These services included home nursing service and physical therapy.

The Seminole and Miccosukee Indians were provided medical services under a \$173,000 contract with the Division of Indian Health of the U. S. Public Health Service. The Indians received medical and dental services and public health nursing from public health clinics and private physicians.

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**Chronic Diseases**

There was an estimated 806,300 persons over 65 years of age in Florida who had one or more chronic diseases. While heart disease was primarily a problem of the aged, it also claimed many younger people. Over 65.4 per cent of all deaths in Florida were caused by some type of cardiovascular disease.

11

Congenital heart disease and rheumatic fever were two forms of heart disease which drew the interest of the State Board of Health. Some 1280 children were examined in cardiac diagnostic centers and 162 were given necessary surgical treatment. A total

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The Seminole and Miccosukee Indians received medical and dental care under a contract with the Division of Indian Health of the U.S. Public Health Service.

1968

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SUNDAY

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TUESDAY

The State Board of Health inspected and licensed 192 hospitals. There was a trend toward modern facilities.

4



of 1266 medically indigent patients received free penicillin or sulfadiazine under a program of the State Board of Health.

An estimated 1100 Floridians died of diabetes, the 10th leading cause of death. Over 4241 medically indigent patients received all or part of their insulin from state sources through County Health Departments.

A total of 47,320 persons was screened for glaucoma and 2.28 per cent of them were referred for diagnostic evaluation. More than 40,200 women in 57 counties were

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# 1968

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SATURDAY

tested for cervical cancer and 507 women were suspected of having cancer. A total of 120 was found positive.

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An estimated 11,800 persons died of cancer, a rate of 191.2 per 100,000 persons. The national rate is 158.8 per 100,000 population. Lung cancer in men has increased 15 times over the past 35 years but now it is being increasingly found in women.

## Dental Health

Public health dentists served the people of 17 counties; dental preceptees who were

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recent dental graduates supervised by the State Board of Health, committees of local dentists, and the county health officers, also worked in dental clinics of 17 counties and the City of Jacksonville.

22

The dental hygienist assisted the public health dentists in making dental inspections of approximately 2500 elementary school children and conducted dental health programs in schools and day care centers. The dental health educator provided consultative services to County Health Departments, colleges and universities, dental organizations, and civic groups.

29



1968

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SUNDAY

MONDAY

TUESDAY

**Diseases from Animals**

Rabies in wildlife is on the increase in Florida and may be a public health problem in the future. There were 112 cases reported in 1968, as compared with 82 in 1967. Most of the cases were in raccoons.

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Florida had 18 cases of leptospirosis, more than any other state. People contracted this disease from burros, dogs, rats and wildlife. However, some of the cases were found among persons who had waded through swamps while hunting.

15

**Sanitary Engineering**

The problem of solid waste disposal and the approval of plans for water and sewage treatment plants, swimming pools, natural bathing places, and shellfish plants contin-

ued to be important items on the State Board of Health's calendar.

A new record was set during the year in the number of sewage treatment plants proposed for Florida. A total of 1196 projects was processed and approved by the State Board of Health. The total cost of these

24

# MBER

# 1968

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THURSDAY

FRIDAY

SATURDAY

projects was \$88 million, an increase of over \$40 million over the 1967 figure.

Some 1115 plans for proposed water systems were approved during the year and the number of plans for construction of public swimming pools increased. Plans and documents for 342 swimming pools for apartment houses, motels, trailer parks and hotels

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Plans and documents were received by the State Board of Health on 342 public swimming pools. These facilities are important to the tourist industry.

26

catering to tourists were received.

Solid waste collection and disposal continued to rank third in municipal expenditures — exceeded only by the cost of education and highway construction. Florida generates solid waste at the rate of 16,000 tons a day — or 5.1 pounds per person. Public health engineers believe that by 1975,

1968

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the amount of solid waste could reach 26,000 tons daily or seven pounds per person per day. Because seven of the most populous counties contain 60 per cent of the state's population and have only 15 per cent of the land area, health hazards can develop from improper collection, storage and dis-



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Sanitarians inspected 32,151 food establishments to protect Floridians from food poisonings and disease.

posal of solid waste. To combat this, 69 incinerators were approved with an estimated construction cost of \$2.9 million.

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Northwest Florida continued to lead the state in the landing of shellfish. Franklin County seafood workers gathered an estimated 4.4 million pounds, which was 85 per

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cent of the total shellfish landed in Florida. Crabmeat production reached 8.3 million pounds. Personnel from the State Board of Health's marine laboratory conducted training programs for seafood workers in Franklin County.

## 5

### Inspection and Permits

County Health Department sanitarians inspected 32,151 food establishments. Of these 21,852 were eating and drinking places; 966 food processing plants; 164 abattoirs; 163 shellfish and crustacea plants; 7928 grocery and meat markets; and 1087

## 12

others. Sanitarians made 164,961 visits in carrying out these inspections.

## 17

Florida, in 1968, had 2937 trailer parks with spaces for 130,171 trailers. This was an increase of 194 parks over the previous year.

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A total of 336 migrant labor camps, which held 41,284 persons, was permitted by the State Board of Health. Permits were also issued to 78 recreational camps which could handle over 10,000 persons.

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Permitted facilities serving buses, railroads, airplanes and ships totaled 155. Of these 29 were catering points and 25 serv-

1968

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SUNDAY	MONDAY	TUESDAY	WEDNESDAY
<p>icing areas for airplanes, nine were bus serving areas; four were railroad commissaries and catering points; 14 were railroad watering points; and 79 vessel watering points.</p>		5	
<p><b>Health Mobilization and Accidents</b></p> <p>Fifty-seven counties offered Medical Self Help Training courses under the sponsorship of County Health Departments, Civil Defense, or boards of education. Over 253,000 persons have completed their training course which in times of disaster will assist an individual or family to survive up to two</p>		12	
17	<p>weeks without professional medical help.</p> <p>More people were reported bitten by snakes—388 in 1968, as compared with 269 in 1967. The State Board of Health certified 227 ambulance establishments, 484 vehicles, and more than 2000 attendants who were trained in advanced first aid.</p>		
<p><b>Mosquito Control</b></p> <p>A total of \$7.2 million was budgeted by 57 counties and mosquito control districts. Because the U. S. Congress ordered the President to reduce expenditures, the federally-supported <i>Aedes aegypti</i> Eradication</p>		26	



# MBER

# 1968

DAY

THURSDAY

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Project, which had been started in 1964, was discontinued.

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## Radiological Health

The State Board of Health licensed 535 separate users of radioactive materials during the year. These included 258 medi-

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The 57 county and mosquito control districts budgeted \$7.5 million to battle man-biting insects.



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cal users; 167 industrial; 27 academic; 64 civil defense, and 10 nuclear service facilities. The radiation surveillance network continued with stations in Pensacola, Tallahassee, Orlando and St. Petersburg for the testing of air and precipitation. Stations in Jacksonville and Miami were part of the

1968

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U. S. Public Health Service network. The State Board of Health cooperated with the U. S. Public Health Service and the Dade County Department of Public Health in operating 10 radiological sampling stations in the Turkey Point area where a nuclear reactor generator is under construction.

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Over 1500 new books and bound journals were added to the State Board of Health's library.



### Health Education

A total of 97 teachers participated in the Health Project in Teacher Education sponsored by the State Board of Health and the State Department of Education. Thirty-one County Health Departments and six colleges and universities cooperated.

24

31

DAY	THURSDAY	SATURDAY	SATURDAY
	5	<p>The State Board of Health library continued to grow. Over 1500 new books and bound journals were added, bringing the total to 26,086 volumes. The use of the audio-visual materials increased 16 per cent with 15,952 items used. A total of 627 motion picture titles was on the shelves.</p>	
	<p>Over 372,000 pamphlets were distributed. The most requested subjects were nutrition, chronic diseases, communicable diseases, maternal and child health and safety.</p>		14
	<p><b>Planning and Research</b></p> <p>A total of \$13.5 million in federal grants was awarded to the State Board of Health by the U. S. Public Health Service, Children's Bureau, U. S. Department of Agriculture, Social Security Administration and U. S. Department of Interior. Health problems for which grants were awarded included: hypertension, screening programs, water pollution, high risk maternal and</p>		21
	26	<p>child medical care, intensified tuberculosis and venereal disease control, residual effects of pesticides in humans, and health services of children of low socioeconomic families in Dade County. Groups assisted by federal funds included migrant laborers, American Indians and Cuban refugees.</p>	

## Keeping Records

The population of Florida rose to an estimated 6.2 million as of July 1, 1968, with an average monthly increase of 10,000 persons. Of these, 7146 were from immigration, and 2854 from natural increase — that is births versus deaths.

There were 100,971 births in 1968, an increase of 135 over the previous year. But the birth rate dropped to 16.7 per 1000 persons. Deaths set a new record for the 22nd year with 68,710 — a rate of 11.1 per 1000 population.

Infant deaths totaled 2433 in 1968, which was an estimated rate of 24.1 per 1000 live births. A total of 62,351 couples was married, an increase of 12.1 per cent over 1967; and there were 31,655 divorces and annulments.

## The Next Calendar Year

Florida is fast moving from a rural to an urban state with all of the attending problems that arise when people live close together. The additional 10,000 persons added to Florida's population each month compound such health problems as sanitation and communicable diseases. In 1968, the State Board of Health had a staff of over 3300 persons and spent more than \$39 million to carry out its health programs.

There are many more health programs and problems not included in this issue of **Florida Health Notes** — we did not have room. These other programs and problems are found in the 350-page 1968 **Annual Report** of the State Board of Health. The ones described here will give you a rough idea of what your State Board of Health and County Health Departments have been doing the last calendar year.

Now we are already far into a new year, with its problems and successes. We hope you will continue to take an interest in what your State Board of Health and County Health Departments are doing to protect the health of you and your community.

# FLORIDA STATE BOARD OF HEALTH

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Governor of Florida

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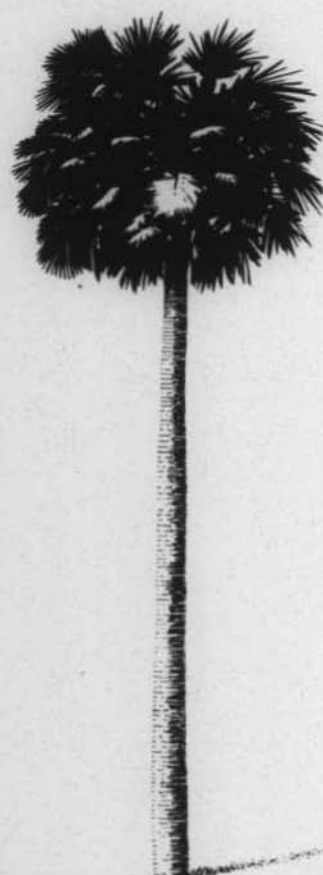
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# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 7

LY

1969

## Water Safety and Scuba Diving

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(Cover photo) Playing in the surf is an activity enjoyed by most Floridians and tourists. However, there are dangers from runouts, undertows and jellyfish.



The lifeguard at a Florida beach is alert to swimmers in danger. When he sees a bather who needs help, he "tosses" his flag, grabs a buoy, and dashes for the water to assist the victim. In the meantime, a lifeguard captain radios for the oxygen equipment.

# WATER SAFETY and SCUBA DIVING

The Michael Smith family is an average Florida family. They enjoy recreational activities on and in the water. The whole family enjoys swimming and fishing. Mr. Smith and the two older boys are scuba divers and surfers. The family has a 16-foot boat and the younger children and Mrs. Smith enjoy the beach and water skiing.

There is little that the Smith family does not enjoy in water recreation on the lakes, rivers, springs and beaches of Florida. They go to the beach on weekends. They travel to the Florida Keys for vacations.

The Smiths enjoy the water but humans are not by nature water animals and the members of the family had to learn how to swim before they could enjoy other water sports. Learning to swim and knowledge of the rules of water safety and rescue are necessary for the enjoyment of Florida's water facilities by the Smith family and millions of fellow Floridians and tourists.

In Grandma's day, many people were content to dunk a little in the water and sit in the sun. Today there are in the United States approximately 100 million persons who participate in water activities. Some 40 million persons spend much of their time in an estimated eight million boats, of which seven million are motor powered.

There are many new activities on water. These include skin and scuba (self-contained underwater-breathing apparatus) diving, water skiing, fishing, boating and many kinds of swimming activities. Water shows at fairs and motion pictures of water activities have helped increase the popularity of water sports. More leisure time has added to people's enjoyment of water activities.

But there is some danger in water activities. In Florida, 548 persons died in 1968 from activities associated with water and boats. Of the drownings which did not involve a boat, 221 were the results of participating in some form of recreational sports and 227 were non-recreational drownings. These included persons who accidentally fell into water, drowned in bathtubs, or drowned while working. An additional 88 persons drowned when they fell out of boats; 13 persons died while working with boats. The total includes 14 skin or scuba diving deaths.

During the first four months of 1969, Florida had 10 scuba tragedies. Five of these deaths occurred in caves of North Florida; one was in the ocean and four in springs or sink holes.

Most drownings are the results of carelessness, unfamiliarity with the water or equipment, lack of experience, or inadequate supervision. Most drownings could have been prevented.

The State Board of Health, by law, is directed to protect the public's health. It has the responsibility to educate the public in ways that will save lives. This issue of **Florida Health Notes** will tell about the pleasures and dangers of such water sports as swimming, water skiing, fishing, scuba diving and boating, and offer suggestions on how to protect yourself and your family from accidents, and possible death, while enjoying these water activities.

There are many public and private organizations which are involved in water safety. The American Red Cross and Young Men's Christian Association are interested in swimming and offer swimming instruction; the U. S. Coast Guard and the Florida Board of Conservation are instrumental in promoting boating safety and regularly patrol the waters of Florida; the Coast Guard Auxiliary and U. S. Power Squadrons are principally involved in boating education; and there are many scuba diving clubs and underwater societies which are interested in promoting safe diving. Some of these organizations and agencies supplied information and assisted with photographs for this issue of **Florida Health Notes**.

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#### FLORIDA HEALTH NOTES

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## Swimming and Surfing

The beach and swimming pools are enjoyed by many people. But there are certain dangers which can ruin a vacation or a day's outing.

Two chief dangers of the beach are the **runout** and **undertow**. The latter is created by the movement of the water back into the ocean after it has splashed upon the beach. The runout is water moving back into the ocean between two underwater sandbars. Sometimes the runouts are very strong and may pull even experienced swimmers out into deep water. People often get caught in runouts by swimming in unguarded places or failing to read signs which mark the places where runouts are occurring. Lifeguards say that runout places frequently change and, because it is impos-

A lifeguard tells a surfer where to surf—away from swimmers.





A lifeguard gives oxygen to the surfer who has been rescued. The victim is then taken to the lifeguard station's first aid room where he is given additional care.

sible to post all of the runouts, an unsuspecting bather may get caught.

Lifeguards advise bathers who are caught in a runout to remain calm, not to over-exert themselves but swim to one side of the runout until they can feel themselves out of the current. Then they can make their way back to shore. The swimmer may come in some distance from where he entered the water, but this is better than struggling against the runout and being swept out to sea.

Bathers should ask the lifeguard on duty for the best place to swim, or swim in front of or near the lifeguard station. Lifeguards also say many persons drown because they are too embarrassed to call for help. They struggle alone to help themselves and when they have expended their energy, they are in trouble.

The men who guard the beaches of Florida say

- \* Never swim alone, and never swim near a pier. The waves may dash you against the pilings and may hurt or kill you.
- \* Don't get too much sun—you are apt to lose energy and if you are out for the first time you may spend several uncomfortable days with sunburn.
- \* Don't swim if you have just eaten a heavy meal. Relax so your digestive system can do its work. Swimming will tax every system of your body.
- \* Keep away from rocks, cars or other objects on or near the beach. You may break a leg while playing.
- \* Don't throw things on the beach. Use the trash barrels. People are often careless around the beach and there may be broken glass or metal which can cut your feet.
- \* Avoid the man-of-war or jellyfish. They may be beautiful things but they can cause welts and much pain. Death may occur in persons susceptible to the poison.

Lifeguards also warn about rubber rafts or floats. They may be loads of fun but they can be punctured and throw you into the water, or they can be blown out to sea by an off-shore wind. Lifeguards frequently have to rescue bathers who have drifted out beyond the safety limits.

Thousands of young men and girls have taken up the art of surfing. While the waves may be breaking right in a particular spot near bathers, you should not surf near swimmers as a loose board can hurt some one. If you "wipe out" (fall from your board), grab it as it may float toward shore and hit another person.

If you are involved in a wipeout, experienced surfers advise you to place both hands over your head immediately and get under the water. The loose board may hit you on the head, and it can be dangerous.

## *Swimming Pools*

Swimming pools are an important part of the Florida scene. They are selling points for apartment houses, motels and hotels which cater to the millions of tourists who come to Florida each year. Not only are swimming pools a sign of status but the mem-

bers of the Smith family use theirs for entertaining, physical fitness, and therapy.

Unfortunately, the rapid growth of swimming pools seems to have outpaced people's ability to own and use them safely. Many of the 221 deaths in 1968 from recreational swimming occurred in swimming and wading pools and this is of public health significance. If the number of pools continue to climb, educational programs must be carried on to reduce the accidents and deaths that occur in swimming, wading and decorative pools.

The most frequent cause of drowning in swimming pools is unintentional falling or slipping into the water. The next cause may be the victim's exhaustion. The most frequent contributing factor in the drowning of children is the lack or inadequate adult supervision and the victim's inability to swim.

Many drownings in residential pools occur when the swimmer is the only person around. Many adult drownings at multiple residence and motel pools occur when the swimmer has trespassed to use the pool at unauthorized hours or during party high jinks.

Competent adult supervision is essential to preventing accidents. Leaving children temporarily unattended contributes to more drownings than any other cause. A child of two quickly learns that a pool is intended for fun and a wading or swimming pool is a magnet to any youngster.

Properly designed and constructed fences or barriers to keep children out of the pool area when the pool is not in use offer the first line of defense against the lack of adult supervision. Plastic and surface pools should be fenced or dumped after each use. Because children will use devious means to gain access to a pool, fences should not have protruding parts that children can use to climb over.

Elderly persons who are unsteady on their feet may fall into a pool if they are left alone beside one. A number of fatalities involving ornamental and fish pools, as well as swimming pools, could have been avoided if the victims had been accompanied by another adult.

It is not known how many persons drowned as an outcome of drinking but there is sufficient evidence to show that alcohol con-



Rules of the Florida Board of Conservation require that a person besides the driver be in the tow boat to keep an eye on water skiers. The rules also permit the use of a wide-angle rear view mirror.

tributes to many adult drownings associated with after-hour parties. A safe rule is never swim after drinking, eating or taking drugs.

All pools should be equipped with at least basic rescue devices, such as a floatable shepherd's crook or light-weight pole. A non-swimmer can pull a distressed bather to safety with one of these. Larger pools should have heaving lines and ring buoys.

### *Water Skiing*

Nearly all of the Smith family water ski and the two older boys, Bill and Tom, have participated in local tournaments. The family is among the more than 10 million Americans who water ski. When skiing they wear lifejackets or lifebelts and are courteous to other users of the water, staying a reasonable distance from swimmers, fishermen and other boaters. Strangely enough, the majority of accidents occur to the boat pulling the skier rather than to the skier, himself.

Michael Smith makes sure that there is another person in the boat to keep an eye on the skier while the driver watches the water ahead. Florida's laws also permit the use of a wide angle rear view mirror.

During training, the boys learned to keep the tow line taut. This was half the battle. When the line became slack, the boys



found they would lose power and slow down. As beginners they often tried to take up the slack by drawing the bar toward themselves, but their instructor told them to "let the boat do the work."

When the tow line is released, the power is removed and the skier comes to a stop. When coming in for a landing, the skier is slowly towed parallel to shore and then releases the line and sinks into the shallow water. When taking a tumble, he clasps his hands over his head to show the boat driver that all is well. When he is skiing in a well-traveled boating area and falls, he holds up a ski to show other boaters that he is in the water.

The U. S. Coast Guard advises boat drivers who tow skiers to:

- \* stop motors before taking the skier aboard;
- \* take the skier on board carefully so as not to swamp the boat; and
- \* avoid towing the skier in heavily traveled or restricted waters, such as swimming areas, narrow winding channels, or areas containing docks, floats and buoys.

### *Danger With Boats*

There are some facts about boating that may be surprising. Fishing and water skiing are two of the most popular activities



The fishing may be good—but by standing up in the boat, these two fishermen are in danger of a dunking. At least one of them should remain seated while boarding the fish.

which use boats. To the casual observer, a sport like fishing looks much safer than water skiing but in fact fishing is an activity which accounts for a larger proportion of recorded accidents than one would expect, even though fishing is the most popular reason for buying a small boat.

There is probably more necessity or opportunity for a fisherman to stand in a boat than there is for a participant in other waterborne activities. In water skiing, there may be relatively little reason for the driver to stand in or overload a boat. Nor is the water skier likely to venture out in rough weather or when the waves are high.

Many boating accidents occur simply because the fisherman fails to observe the standard rules of common sense boat handling. A large percentage of the recorded fatalities which result from careless practices can be placed under the heading of "Operator's Negligence."

Most of the accidents are caused by standing, poor observation, unbalanced load, sudden maneuver, overloading, jumping overboard, sudden start, the wake of other craft, hazardous waters, reckless operation and intoxication.

Of less consequence are weather and windstorms, engine failure or unseaworthy boats.

### *Fishing from Boats*

Small boats are very popular for fishing. Because so many millions of people fish from such boats, the number of accidents that do occur is large enough to merit some attention.

Excitement in landing a fish can bring a fisherman to his feet and an unexpected movement can pitch him overboard or swamp the boat. Michael Smith once had a bad experience and a dunking when he tried to land a fish while standing, and now he stays seated all the time he is fishing. If he has to stand to keep a line from fouling, his companion stays seated and keeps the boat on an even keel.

Other tips which Mr. Smith has learned over the years are:

- \* Stepping into a boat with a motor is a good way to lose your balance and a motor. Set the motor on the dock edge, get in and plant your feet athwart the boat, then swing the motor in and over the transom.



Thousands of Floridians and tourists enjoy boating on the state's rivers, lakes and harbors. Knowing how to avoid or prevent accidents can make boating much more delightful.

- \* Sit down to pull the starter rope. If you stand and the expected compression isn't there, you may go into the water. A hard-to-start motor should be tuned by a serviceman. It may let you down with darkness or a storm coming.
- \* A threatening storm means only one thing to the experienced fisherman. Run for home. One of the greatest mistakes a landlubber can have is the lack of respect for bad weather.
- \* Hooks are the fisherman's No. Two Threat. They are not usually fatal but always painful and sometimes disabling—as in an eye injury.
- \* A hot sun and lazy fish may make a pause for a cold can from the cooler a good idea. Drinking alcoholic beverages, however, should not be used where a miscue can be your last.
- \* When alone in a boat, it's easy to lose your balance while

moving forward to drop or hoist the anchor. Step on the boat bottom amidship, not on the seat, keep low with one hand on the gunwale.

## *The Boating Public*

Boating has become an increasingly popular sport. As previously mentioned there are more than 40 million persons who enjoy boating and eight million pleasure craft in the nation. This is about one boat for every 25 persons in the United States. It is a common sight to see small motor-powered boats and trailers parked beside homes in many residential areas. And it is common to see families unloading their boats at ramps in the early morning hours, ready for a day on the water—fishing, water skiing, or just taking a pleasure ride. The problem in Florida is that some streams and waterways are crowded with boats and there is a need to direct traffic and enforce the regulations as State and local police do on the highways.

The Florida Board of Conservation has patrols on the navigable waters of the State which make spot checks for safety equipment and enforce Florida's boating registration and safety laws. The U. S. Coast Guard also operates safe boating details which patrol waters of the United States that are navigable, including those in Florida. In addition to Florida's boating laws, the boatman must comply with the Coast Guard's "rules of the road."

Both the Board of Conservation and U. S. Coast Guard patrols are on duty during busy weekends when the Smith family and other boaters take to the water. The Coast Guard crews make an average of 35 spot checks a weekend for safety equipment and they usually find an average of 20 violations. Most of these are

Some sensible rules for angling are:

- \* Keep cool while netting a fish—don't jump up;
- \* Cast and fish from a sitting position;
- \* Cast overhead—not sidearm;
- \* Be sure your back cast doesn't hook your partner;
- \* Carry spare shear pins, spark plugs and pliers for possible emergencies; and
- \* Use common sense—the odds-maker for angling.



The Florida Board of Conservation and the U. S. Coast Guard have rules and regulations on safe boating. An officer of the Board of Conservation (below) checks the hull numbers on a boat and displays the safety equipment required in small craft. A Coast Guard safe boating detail (above and right) makes a spot check of a pleasure craft. The Coast Guard men approach the boat, ask permission to come aboard, and discuss the safety equipment with the boatman.







small violations and the most frequent is over-crowding, which leads to capsizing. In the case of most boating deaths, people tried to swim to shore from a capsized boat and failed to make it. Many people don't realize that most capsized boats will float. A 16-foot wooden boat, when it is capsized, will keep as many as 18 persons afloat, although that many people should never be in a boat this size.

### *Safety Equipment for Boats*

The Board of Conservation and the Coast Guard both require approximately the same safety equipment on boats. Every boat, regardless of size, must have a life jacket or preserver for every person aboard, one or more fire extinguishers, and appropriate anchor and line. According to Coast Guard regulations, outboard motor boats of less than 26-foot length, which do not carry passengers for hire and if built so that flammable gases or vapors will not be trapped in closed compartments, do not have to have fire extinguishers. Boats under 16 feet must also carry an oar or paddle; larger boats must have a hand or power-operated whistle or horn which will produce a blast every two seconds audible for a half-mile. Boats which are from 26 to 40 feet in length must also have a bell.

The lighting requirements for boats are specific. Many of the boating violations at night are caused by improper lighting. Both the Coast Guard and Board of Conservation require a white light visible for two miles on the stern of the boat. The regulations require that forward on the boat there be a green light on the starboard (right) side, and a red light on the port (left) side. Boats over 26 feet in length must have a white light on the bow. When lying at anchor at night, all boats under 65 feet and sailboats must show anchor lights, except those in "special anchorage areas."

### *Training for Boat Owners*

When the Smith family bought a boat, a friend suggested to Mr. Smith that he should take a boating course offered by the Coast Guard Auxiliary or the U. S. Power Squadron. These are civilian organizations which carry on public education by giving courses in boating. The U. S. Coast Guard also has training officers who conduct educational programs.



Scuba divers work in the underwater world—a place enjoyed by thousands of people. Many divers seek sunken treasure and artifacts in Florida waters.

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Mr. Smith learned valuable information through the course he took:

- \* Check your boat thoroughly and never leave the mooring until this has been done;
- \* Never overload the boat and be especially careful of non-swimmers and children;

- \* Carry a life preserver for every person aboard;
- \* Observe weather, wind, tide and current conditions before starting out;
- \* Keep to the right when meeting another boat and give the right-of-way to vessels approaching from the starboard (right) side;
- \* Keep away from large vessels and sailboats, which are not as maneuverable as smaller motor boats, and out of the wash of speed boats;
- \* Always be courteous, careful and competent;
- \* Exercise extreme caution when filling fuel tanks. Turn off all fires and electrical accessories and don't smoke. Hold filling nozzle firmly against fill pipe; wipe spillage; and air engine compartment and all enclosed spaces before restarting motors.
- \* Never make a turn at high speeds because a small craft can be swamped in its own wake; and
- \* Approach the dock or mooring against the wind or current, whichever is stronger.



Skin divers, with snorkel, mask and fins, are limited in their activities by lung capacity and breath control.

## *Underwater World*

Most Floridians know the world above and on the water but there are thousands of people who are enjoying the world beneath the water. They use either skin diving equipment or self-contained underwater breathing apparatus called SCUBA.

Florida has thousands of lakes, caves, springs and rivers for skin and scuba diving—not to mention the Atlantic Ocean and the Gulf of Mexico. The state also has the John Pennekamp Coral State Park, an underwater state park in the Florida Keys where divers can view a wide variety of marine life.

According to the Underwater Society of America, there are about 3000 diving clubs in the United States. There are thousands of diving enthusiasts in Florida who dive in caves, springs, rivers and ocean. Although many divers go deep into caves and springs, the most enjoyable diving, according to one diver, is at 20 to 50 feet where it is light and warm and where fish and plant life are most abundant. At these depths, the standard diving tank, which has a capacity of 72 cubic feet of air when measured at atmospheric pressure, can keep a diver underwater for some time, depending on his depth and breathing rate.

Most of the developments in modern scuba diving stem from the need to do specific kinds of work underwater. Early divers used heavy gear that required an air hose to a compressor on the surface. As diving progressed, new tools and techniques were developed and more types of underwater activity became possible. Today men dive for purposes which range from warfare to sport. Some of the important industrial applications are ship salvage, submarine rescue, inspection and repairs, and construction. Many Florida divers seek sunken treasure ships along the coast, and Indian artifacts in rivers and lakes.

### *Skin and Scuba Diving*

The skin diver is more limited than the scuba diver in his activities. Using a mask, snorkel and fins, the skin diver swims along the surface of the water, breathing through the snorkel which has one end sticking out of the water. His body floats a few inches beneath the surface. When he wants to go to the bottom, he takes a deep breath and surface dives. His time on the bottom





A sport shop operator (left) prepares to fill air tanks with an electrical-ly powered compressor. A State Board of Health chemist (below, right) tests the oxygen content of air tanks which will be used by scuba divers.



is limited by his lung capacity and breath control. When he rises, he holds his breath until the end of the snorkel is out of the water and then exhales. The skin diver does not usually use air tanks.

The scuba diver employs tanks of compressed air strapped to his back and because he has his own source of air, he is free to stay near the bottom and become part of the underwater world. Because of the cold temperatures at increased depths, rubber and neoprene suits have been developed to provide insulation. Completely outfitted with mask and fins, the "frogman" looks like a creature from another world—which in a way he is.

Most divers use the "open circuit" scuba breathing apparatus which means the diver inhales the air and exhausts it into the water when he exhales. The "closed circuit" apparatus uses pure oxygen and the carbon dioxide exhaled by the diver is absorbed by a special canister. No gas is exhausted into the surrounding water. Because the closed circuit is free of bubbles and noise, the Navy uses this type for military purposes.

Rubber suits used by divers are of two basic types: dry and wet. The dry suit operates on the principle that a layer of dry air acts as insulation between the body and cold water. The watertight suit serves as a shield to trap the air inside. The clothing worn under the suit must remain dry and should a leak develop, the underclothing will become wet and the suit will lose its protection.

Most divers use wet suits which also operate on the principle of air insulation. The rubber or neoprene suit contains millions of tiny individual air cells which do not absorb the water but furnishes the necessary insulation. A thin film of water trapped inside the suit is warmed by the body and, in turn, keeps the body warm. For maximum protection, a wet suit must fit snugly against all parts of the body. If the material sags any distance from the body, that space is filled with cold water which must be warmed by the body. If a wet suit fits poorly, most of the protection is lost.

### *Air Fit to Breathe*

The crucial part of the scuba diving gear is the supply of compressed air carried by the diver. Due to the popularity of scuba diving, the use of compressed air systems for supplying breathing

air has greatly increased in recent years. Not only scuba divers, but astronauts are concerned about the need for good breathing systems. It is the quality of the compressed air that is of importance to the scuba diver and of concern to the State Board of Health.

"Pure" compressed air is the gas of choice for scuba diving. Unfortunately, it is not always possible to obtain "pure" air. There is no agreement about what pure air is. Potential contaminants likely to be encountered in compressed air include carbon monoxide and carbon dioxide in excess of natural concentrations, oil vapors or droplets, decomposition products resulting from a breakdown of the lubricants used in the compressor, and obnoxious odors.

For additional information on Florida's boating regulations, write:

Florida Board of Conservation  
Elliot Building  
Tallahassee, Florida 32304

For information on the federal laws, contact the nearest U. S. Coast Guard facilities, or write:

Commander, 7th U. S. Coast Guard District  
51 S. W. 1st Avenue  
Miami, Florida 33130

Compressed air for scuba diving can be obtained from many places, including sport shops and marinas. Many divers have their own compressors. Some of the commercial establishments which sell compressed air bring air tanks to the State Board of Health to have the air tested. A few states have set standards for compressed air to be used in shallow, or non-decompression diving, which specify how much natural constituents and foreign gases are allowed. The standards adopted by one state recommends an oxygen content of 20 to 21 per cent; carbon dioxide, less than .03 per cent; carbon monoxide, less than .01 per cent; oil mist, less than five milligrams per cubic meter of air; and similar standards for oxidants, hydrocarbons, odors and water vapor.

The tanks used by divers are made of galvanized steel or similar metal which can withstand high pressures of compressed air, usual-

ly more than 2000 pounds per square inch. The air is placed in the tanks by compressors operated by either gasoline engines or electric motors.

The quality of compressed air is influenced by two principal factors: the presence of certain contaminants in the air supplied to the compressor; or materials added to the air as it undergoes compression. The first may be influenced by dust in the room, odors from a nearby factory or carbon monoxide and carbon dioxide from automobiles in a nearby street. The second group of contaminants may include oil mists or vapors or oxide of nitrogen which may be injected into the compressed air by the compressor and motor.

While there is no routine inspection of suppliers of compressed air, most suppliers are themselves professional or amateur divers and are interested in selling the best compressed air. There are no regulations in Florida and so the State Board of Health laboratories use guidelines set up by other states and the U. S. Navy. State Board of Health chemists use portable oxygen indicators to measure oxygen content; fibre glass filters to detect oil mist and particulates; gas detector tubes to measure carbon monoxide and carbon dioxide; visual means to gauge condensed water; and the "nose" to find off-odors, such as paint solvent vapors.

### *Diving in Florida's Caves*

Of special attraction to scuba divers in Florida are the many water-filled caves and springs. The limestone caves contain narrow and large passageways, pockets and rooms of various sizes for divers to explore. Such caves are not unique to Florida but in this state the water is usually clear and about 72 degrees Fahrenheit the year around. Florida also has about 18 springs of the first magnitude with a flow of 20 million gallons of water per day or more. Many of the caves and springs are on private property and there is no control over the divers. Some of the more popular spots are Little River in Suwannee County, Blue Springs in Volusia County, 40-Fathom Sink in Marion County, and Crystal River in Citrus County. An operator of a commercial diving place on Crystal River estimates that more than 80,000 divers have dove in his place in the past few years.

The divers who dive in caves are not always thrill seekers. Many of the divers are physicians, scientists, professors and in-

structors from the University of Florida and engineers from Cape Kennedy. They take cave diving seriously and respect the potential dangers. Although much has been written about scuba diving in early 1969 because of the five scuba diving deaths in a cave, only 44 per cent of scuba deaths in the past eight years occurred in such places. The other deaths happened in lakes, rivers, the ocean—nearly everywhere divers go.

The reasons for cave deaths in the past have been the lack of safety lines or wandering from the safety line, the use of a single tank, and poor judgment. At great depths, divers develop psychological and anesthetic problems. Only experienced divers should go below 200 feet as some of the latest deaths in caves occurred below that depth.

Usually the last thing that occurs to a diver is panic. Training must be carried out until control is second nature. If lost, a diver should sit quietly until his buddy finds him. If he stirs up the silt in the bottom of the cave, he cannot possibly find his way out if he has wandered from his safety line.

The first thing a prospective diver needs is experience and training. Then he needs the right equipment. The diver should go through basic and advanced scuba diving courses and go into caves with an experienced diver 20 or more times, penetrating a little deeper each time. **Under no circumstances should a diver ever dive alone.**

The special equipment a cave diver needs includes double tanks, a large primary light, a secondary or back-up light, a line reel with a safety line, depth gauge, wet suit, watch, knife, and submersible pressure gauge which tells how much air is left in the tanks.

### *Be Prepared for Emergencies*

Knowing beforehand how to cope with a crisis can be lifesaving and this is essentially true around water. The primary cause of drowning in many cases is panic.

The State Board of Health knows that it is a good idea to be prepared. The best way to handle emergencies is to rehearse and

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A completely dressed scuba diver resembles a "frogman" from another world. (Starting at bottom) He dons his wet suit, which must fit snugly; tests the air in his tank; places it on his back; puts on his fins; and heads for the water.





be prepared. Michael Smith and his family picked a safe spot and ran through some of the emergencies that lent themselves to practice, such as rescuing a swimmer or hanging on to an overturned boat.

Some of the problems and situations they rehearsed were:

- \* You are swimming and a cramp develops in your leg. A cramp is a hard knot in a muscle. Take a deep breath and roll over to a face-down position in the water, grasp the cramped area and apply pressure. This will usually release the cramp.
- \* If your boat turns over, stick with it and don't panic. If you can't turn the boat over, the best method for hanging on is to lock hands with another person over the boat's hull. This will give you a better grip and helps prevent fatigue. Wait until help comes.
- \* You are swimming in a lake and get tangled in water weeds. Don't panic! Quick, jerky movements will wrap the weeds tighter around your arms and legs. Gently pull your arms and legs away, shaking them to clear them of weeds.
- \* You are stranded in a boat out in the middle of the lake with a dead motor and no oars . . . If you have a white shirt or towel, wave that and you will be easy to spot. A horn, bell or whistle sounded in patterns of three short blasts will also warn others that you're in trouble. Marine distress kits containing flares and smoke signals are good for attracting attention.
- \* While wading in water that is only knee-deep, you suddenly step off into a hole and find yourself over your head. Don't try to cross the hole; you don't know how wide it is. Take a deep breath, sink to the bottom, then push off and move backward, repeating the sequence until you are back to your original spot.

The State Board of Health wishes you, along with the Smith family, much pleasure in water sports. It hopes that suggestions made in this issue of **Florida Health Notes** will protect you and your family from tragedy.

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(Illustrations on pages 169, 178, 180, 185 and 186, courtesy of Florida News Bureau; on page 177, courtesy of Cypress Gardens, Florida.)

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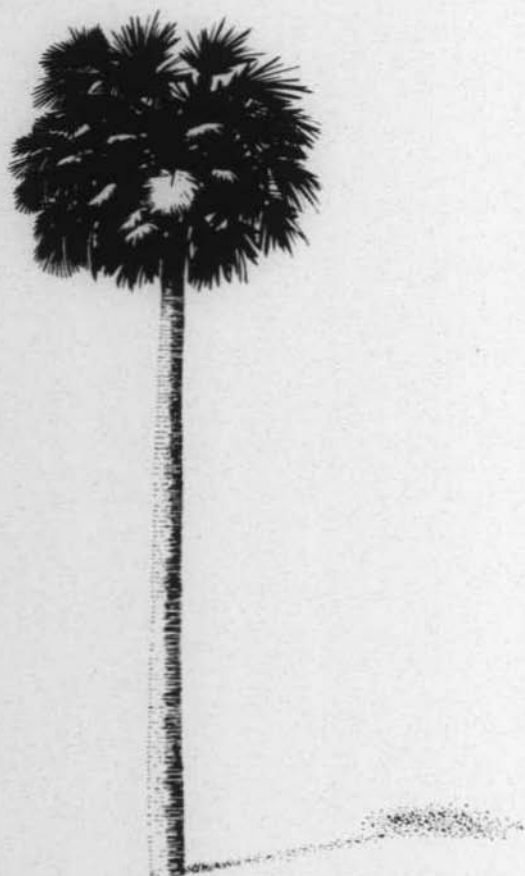
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# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 8

AUGUST

1969

*Accidents and Ambulances*

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(Cover photo) Disasters often require emergency medical services. Home and highway accidents, fires, heart attacks and sudden illness require trained attendants and fully-equipped ambulances.

Automobile and bicycle accidents are disasters in which a child is often killed or injured. The motorist should check to see if all is clear before backing the car. Children often forget that bicycles are more than toys.

# Accidents and Ambulances

\*Reginald Smith was injured in an automobile crash. Police waited 45 minutes before an ambulance reached the scene.

\*Mrs. R. A. Payne had a heart attack. The ambulance attendant did not have the training to cope with the situation. She died on the way to the hospital.

\*A man was knifed in a quarrel in a city's "tenderloin" section. An ambulance racing to the scene ran a red light and crashed into a car, killing two persons.

All of these situations have happened, or could have occurred, in any city in Florida. Accidents—and emergencies—take many forms and they occur around us all of the time.

"Disaster" probably suggests a rare and catastrophic event—such as a flood or earthquake. Most of us are convinced that "It'll never happen to me or to my town" so we are largely indifferent to the quality of local preparation for emergencies. Floridians have come to consider hurricanes as part of the local scene, and because of advance warning systems, they take these "big blows" in their stride.

However, we are not seeing it "like it is." Disaster whirls down upon, sweeps into, or explodes within communities almost daily. Uncertain nature and unpredictable man provide all the necessary ingredients for terrible disasters. And as man develops greater power, faster speeds and greater forces of all kinds, the potential for disaster expands.

Public health officials consider the 4041 Floridians who died in accidents in 1968 as "disasters." Of this number, 2068 died in automobile accidents. This is nearly equal to the population of Jasper, Graceville or Edgewater — according to the 1960 census. About 55,000 persons were killed in automobile accidents across the country. This is nearly equal to the present population of Columbia, Clay and Flagler Counties.

Many communities and rural areas are not equipped to take care of emergencies. A single collision between two cars could be a disaster as far as the emergency facilities of most communities are concerned. If a disaster involving 10 or 12 people were to explode in your community, would the emergency medical services and follow-up care be adequate to determine whether victims would live—die—or spend the rest of their lives in wheelchairs?

This issue of **Florida Health Notes** will tell you about a problem prevalent in many communities—emergency medical services, accidents which may lead to the need for these services, and a new Florida program to cut down on the number of intoxicated drivers—the Implied Consent Law.

## *Accidents*

Accidents and sickness in the home, on the street, or in the factory are frequently the reasons why people need emergency medical services. Life would be pleasant if emergencies did not arise, but the disasters which swirl around us frequently touch our lives and those of the ones we love.

Communicable and chronic diseases have long been problems for public health workers, but many of our citizens who are injured or killed by accidents may be alive today if these accidents could have been prevented. Here is where public health enters the picture. Here is where education is necessary.

Accidents, with 4041 deaths in 1968, were the fourth leading cause of death in Florida—ranking behind heart, cancer and stroke. This means that over 65 persons out of each 100,000 Floridians died

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### FLORIDA HEALTH NOTES

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Falls are the Number One Killer in the American home. This young lady should use a stepladder to remove her curtains—instead of a stool.

as a result of an accident. In addition, many thousands of persons were injured permanently. The containers we call "homes" and the metal contraptions we call "automobiles" are two of the most dangerous things in our lives.

Accidents are preventable! Safety is the positive protection of our independence that allows us to go where we want to and when we want to. Safety is the right way to do things. We can avoid accidents if we—

- \* Recognize the hazards;
- \* Understand the defense against the hazards; and
- \* Act in time to avoid the hazards.

### Home Accidents

We all love to go to a picnic, attend a concert, or take a trip. But accidents could prevent us from doing any of these things for a long time. Accidents could prevent us from doing a great many



"Look what I've found," squeals this youngster. Overdoses of aspirin and internal medicines head the list of substances which poison children.

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things and make us dependent on other people.

\* More than 43 per cent of all accidental injuries occur in and about the home.

\* Falls lead in the cause of accidental deaths and injuries in older people.

\* Burns from fires cause many deaths among older people and children under four years of age.



\* Poisonings, suffocations from swallowing objects, and suffocation from blankets, plastic sheets and bed clothing occur most often in young children and babies.

\* Deaths from accidental discharge of firearms occur most often among persons 15 to 24 years of age.

**FALLS** are the Number One killer in the American home. Even when they do not kill, they can inflict severe fractures that require long hospitalization and convalescence. Two-thirds of all home falls occur at floor level. Slippery floors or rugs trigger many falls; stairs rank second; and furniture, third. Also indicted are paved walks, roofs, ladders and scaffolds.

Mrs. Sara Cox fell on the stairs when she missed the last step in the belief that she was already on the bottom. Contributing factors were poor visibility due to inadequate lighting. She also had on floppy bedroom slippers, and new bifocal glasses. Handrails, proper lighting and proper shoes could have saved Mrs. Cox from falling.

Other traps for Mrs. Cox are scatter rugs, spilled foods and liquids, pets and toys left by children. The placement of furniture makes an obstacle course of her living room; she uses chairs, instead of a sturdy ladder, to adjust curtains or replace missing light bulbs. Slip-proof rugs, proper traffic lanes through her living-room, and immediately-wiped up foods would make her home safer.

**FIRES** are another reason for calling emergency medical services. Cigarette smokers spark over 150,000 fires annually in buildings in the United States. They probably set as many outdoors. Fires in the home are usually the results of smoking in bed or around inflammable materials.

Because of a large number of burns, fires and scalds, the kitchen is one of the most dangerous places for home accidents. Twelve per cent of all home fatalities and 26 per cent of all home accident injuries occur in the kitchen. Heated cooking dishes, cooking fats and steam are dangerous. Common sense in planning and using the kitchen will prevent many accidents. Adequate lighting over working areas and ranges installed away from curtains and windows

are safety features. Turning cooking pan handles away from the edge of the range, using heavy potholders, and turning off equipment will help keep the kitchen safe.

Plan an escape route from your home and bedroom. Practice using it. Work out an alternate route—just in case. To keep out smoke and fire, close your bedroom door before going to sleep; if you smell smoke, never open a hot door.

**MEDICINES AND DRUGS** deserve special attention. The wise parent locks medicine in a cabinet away from children. He burns, dissolves or flushes down the toilet old medicines which have changed in composition and may have an adverse effect on him.

Do not rely on a friend's advice, what you may read in a book or newspaper, or hear on television for taking medicine. Give or take medicine only as prescribed by a physician.

Children are by nature curious and they frequently get into medicines—either in the medicine cabinet or those left on a night stand. Overdoses of aspirin cause more poisonings of children than any other substance. Other substances which are on the list are internal medicines, cleaning and polishing agents, insecticides, rodenticides (rat poisons), weed killers and kerosene. (See **Florida Health Notes**, Vol. 61, No. 1, 1969)

Store all medicines away from toilet articles and detergents. Mark external medicines with a large red X and place only one night's supply of pills on the night stand. Elderly persons are frequently victims of poisonings because of failing eyesight or poor memory.

## **Industrial Accidents**

The elimination of accidents is vital to the public interest. Accidents produce both economic and social loss, retard standards of living, and impair individual and group productivity. On the practical side, there is the simple and obvious fact that accidents cripple industry and society. They also involve the needless destruction of human life.

The Industrial Revolution unleashed tremendous forces for production. Factories were working wonders of productivity but they

Cigarette smokers spark over 150,000 indoor fires annually in the United States. Many fires are the results of smoking in bed.



were often inferior to the small handicraft shops in terms of human values—contentment, health and physical safety.

Accidents were not entirely the result of management villainy. They were probably inevitable. The tools of mass production had to be invented and applied before anyone could imagine the problems they would create. The problems had to be known before corrective measures could be considered, tested and proved. Though there were employers who hid their heads in the sand and denied the existence of the problem of industrial accidents, wiser men began, as early as the middle of the 19th Century, to solve the problems of industrial accidents.

The National Safety Council early in the 20th Century started promoting the three E's of safety — Engineering, Education and Enforcement. These same principles are applied today in Florida by the Division of Labor and Employment Opportunities of the Florida Department of Commerce.

There were over 248,000 industrial accidents in Florida in 1968. These cost the state and employers over 6.6 million days of lost work, and \$51 million in compensation and medical payments. Over 87,000 of the accidents were disabling and 333 resulted in death.

The leading cause of industrial accidents in 1968 was overexertion, or bodily reaction, which led to strains, sprain, dislocation of the lower back or trunk, or hernias.

The second leading cause was when workers were struck by a falling object, such as building material, trees, limbs, chains or cables. Falls from vehicles or mobile equipment was the third leading cause; and workers striking against machinery or vehicles was the fourth leading cause of industrial accidents.

The Division of Labor and Employment Opportunities, under the Workman's Compensation Law, inspects industrial plants where the inspectors look for reasons for accidents and enforce safety regulations. They also carry on safety meetings in their districts, including 10-hour courses for plant supervisors, and six-hour courses for apprentices.

### Pedestrian Accidents

All of us are pedestrians at one time or another. As such we should be alert to the dangers facing us. As motorists we should be considerate of pedestrians. No matter the circumstances, the



Bicycles can be dangerous. This girl lives by the rules and walks her bicycle across a busy intersection.

pedestrian, when struck by an automobile, is almost certain to be killed or seriously injured. The driver suffers no physical damage. Nearly 10,000 pedestrians were killed in the United States last year. In Florida in 1968 there were 375 motor accidents involving pedestrians.

Many of these accidents were the fault of pedestrians. Generally, they feel that they have the right-of-way but when it comes to squabbling with a 3000 pound car, they should give the automobile the right-of-way.

The most common causes for pedestrian accidents are improper and unsafe crossing and improper walking along a highway. These two account for more than 50 per cent of all pedestrian accidents. Other leading causes are getting off or out of vehicles, walking from behind parked cars, children playing in the streets, and workmen in the roadway.

Forty per cent of pedestrian accidents involve persons of retirement age who cross between the lines marked as crossways. Frequently they fail to make the curb before the light changes or they cross against the light. To prevent such accidents, the pedestrian should wait for the beginning of a new green light, or walk signal, before crossing the street. Also, he should stand on the curb, not in the street, while waiting to cross.

The automobile driver has trouble seeing and reacting to objects that enter his car's path after dark. Dawn and twilight are the most dangerous times. The pedestrian should wear light colored clothing which does not blend with the background. He should always walk on the road's left side facing on-coming traffic in order to see approaching cars. He should step off the pavement when necessary. Never walk on a superhighway—even if your car breaks down. Signal for help by opening the hood of your car.

### The Cyclists — Danger on Two Wheels

Riders of bicycles and motorcycles are subject to the same rules of the road as drivers of cars. Too often children are given bicycles as birthday or Christmas presents and they are not taught safe ways to ride them.



While it may be fun, giving another person a ride on the handlebars of a bicycle is dangerous. Law enforcement people say that a single-seated bicycle is not meant for two persons.



Few children are injured while riding bicycles to and from school. Nine out of 10 bicycle accidents occur when children are at play. Too often children forget rules and regulations and weave in and out of traffic on bicycles, cross in front of cars, and do other dangerous things.

The bicycle rider has the same rights—and he is subject to the same responsibilities as any other vehicle—except in those special provisions which apply to bicycles.

- The cyclist must obey the same traffic signs and rules as drivers of cars.
- He must keep one hand on the handlebars.
- Give hand signals with left hand when changing directions.
- Stop at stop signs, look both ways and then proceed carefully.
- Never carry passengers and ride only on the bicycle seat.
- Never hitch rides by hanging on to other vehicles.
- Ride only on the right side of the street close to the curb.
- Give all pedestrians, cars on the street, and others the right of way.
- Walk bicycles across busy intersections.

Motorcycles are more dangerous than bicycles because when they are involved in accidents injury or death is nearly always certain. A cyclist, when he is traveling at 60 miles an hour, doesn't have much of a chance should his motorcycle hit loose gravel, a hole in the road, an obstacle, or another vehicle. He is vulnerable. His body would catapult through the air, landing against the first object in its path.

A motorcyclist should have adequate instruction before he takes off on his motorized steed. He should have plenty of experience before riding in traffic. According to Florida laws, he must wear a safety helmet; and he should wear durable clothing.

### Highway Accidents

Perhaps a highway accident is one of the most common reasons for calling an ambulance. As previously mentioned more than 55,000 persons were killed in automobile accidents in the United States in 1968. This is a five per cent increase over the previous year. More than 4.4 million persons were injured, an increase of 200,000 over 1967.

The majority of these accidents occurred because of "speeds too fast for conditions." Speed caused some 800,000 accidents. Other leading causes were reckless driving, driving on the wrong side of the road, failure to give the right-of-way, improper turning, following too closely, and going off the roadway.

Four out of five accidents occurred on dry roads in clear weather. Fifty-five per cent occurred during hours of darkness; 40 per cent of the deaths and 33 per cent of the injuries occurred on Saturdays and Sundays; and one-third of the drivers in fatal accidents were under 25 years of age.

Contrary to what many people believe, most motor vehicle accidents are preventable by one or both drivers involved—even though it means letting the other driver have the right-of-way—even if he is in the wrong. If discourteous drivers make you angry, control your anger—it never pays to argue with automobiles.

There are many precautions that drivers can take when they are faced with unexpected action of other drivers or pedestrians, the unpredictable factors of lights, weather, roads and traffic conditions, mechanical condition of vehicles, and their own feelings.



There are many ways a driver can prevent accidents:

- Have a healthy respect for traffic and weather conditions—even though it means going far below the posted speed limit.
- Because many accidents occur at intersections, signal that you are turning. Get into position early (left turns from center lane; right turns from right lane). Slow down to give yourself reaction time. Look first to the left and then right and make your turn when traffic is clear.
- Following too closely is another common cause of accidents. Stay alert, avoid collisions with the vehicle ahead; stay well back of the car ahead of you, allowing at least one length of car for every 10 miles of speed.
- When passing another car going in the same direction, make sure the road is clear ahead, check traffic behind you, signal with your hand or blinker before changing lanes, move into the left lane, accelerate, tap horn to signal that you are passing, and then move back into the right lane when you are clear of the other car.

- Practice defensive driving. Anticipate what other drivers and pedestrians are going to do and be prepared. Look beyond the cars ahead of you and size up the situation before it presents itself.

- As in all accidents—prevent them by seeing the hazards, understand the defense, and act in time.

## 1 Drinking and Accidents

In our society today there is a universal acceptance of the tolerant view that a couple of alcoholic drinks never hurt anyone. So—hospitality and drinking—and driving—often go together. The advice of public health workers and the safety councils “If you drink—don’t drive” is largely ignored.

Yet studies of fatal accidents show that up to 50 per cent of drivers involved had been drinking. This does not mean that Florid-

More than 2060 persons died in automobile accidents in Florida in 1968. Studies show that up to 50 per cent of drivers involved in fatal accidents had been drinking. The advice of public health officials and safety councils — “If you drink — Don’t drive!” is often ignored.



ians are alcoholics. It does mean that most drivers are ignorant of the physiological facts about alcohol.

Chemical tests for intoxication were first used in the United States about 40 years ago. Reports endorsing the use of chemical tests for intoxications were issued in 1937 by the American Medical Association and the National Safety Council. Following World War II, the use of chemical tests for intoxication spread rapidly until all of the 50 states use them. Florida is one of 43 states that have laws providing for a chemical test for presumptive levels of intoxication.

## *The Implied Consent Law*

The Florida philosophy is that "driving in Florida is a privilege and not a right." When a Floridian accepts the privilege extended by the state to operate a motor vehicle, it is deemed that he has given his consent to be tested for intoxication if the need arises.

A driver may be tested for intoxication after he has been arrested for a traffic violation and the police officer sees other indications that the driver is under the influence of alcoholic beverages. These signs may include slurred speech, staggering, impaired control of his body, and/or foul breath.

The officer informs the driver of his constitutional rights:

- You have the right to talk to a lawyer and have him present while you are being questioned.
- If you want a lawyer and cannot afford one, the court will appoint one for you.
- You have the right to remain silent; and
- Anything you say can and will be used against you in court.

(The driver then is asked if he understands the questions and if he still wishes to talk to the police.)

The police officer also informs the driver of the following:

- I am now offering to give you an approved chemical test of your breath for the purpose of determining the alcoholic content of your blood, and
- If you refuse to take this chemical test your privilege of operating a motor vehicle will be suspended for a period of six months.





Under Florida's Implied Consent Law, any licensed operator may be tested for intoxication. The arresting officer informs the driver of his constitutional rights and that he will lose his license for six months if he refuses to take the test.

If the driver gives his consent to take the test, he is given one of four chemical tests which indicate how much alcohol he had consumed. These tests, breathalyzer, drunkometer, intoximeter and sober meter, are approved by the Division of Health.

In order to give some of these tests the drivers must be brought into the police station. Because alcohol in the blood can rapidly dissipate, it is important that the drunken driver be brought in promptly. A driver who is unconscious or incapable of refusing to take the test, is deemed not to have withdrawn his consent. A blood specimen may be drawn by an authorized agent at the direction of the police officer so the alcohol level of the blood can be determined. If the alcohol level reaches 0.10 (zero-point-one-zero) per cent, the driver is judged to be intoxicated.

Should the driver refuse to submit to the chemical test, he forfeits his operator's license for six months. If he takes his case to court, the police officer must prove that he had a reasonable cause to believe the defendant was driving while under the influence of alcohol; the defendant was lawfully arrested; the defendant refused to submit to the chemical tests; and the driver was warned, and that he understood his driving privileges would be suspended for

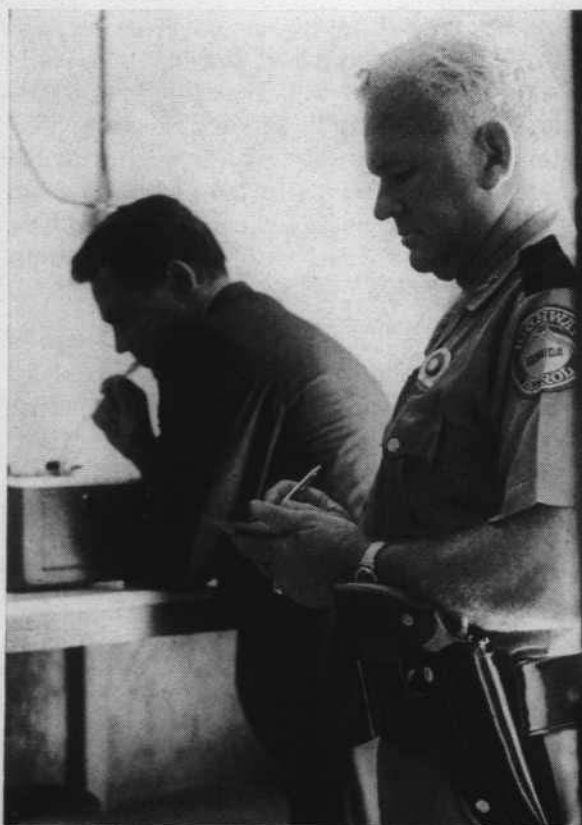
six months if he refused to submit to the test. If he is found guilty of additional charges, the defendant may face further suspension of his operator's license or other penalties.

State Police say that this new law will detect abnormal conditions that may save lives. If a driver is arrested for being drunk, but chemical tests show that he is not, the officer will know that there may be a medical condition, such as diabetes, that needs immediate attention. The police will then take the person to a hospital. The law will also protect the police against charges of false arrest.

### Training and Certification

No chemical test can be performed under the provisions of the Implied Consent Law without the officer possessing a current permit from the Division of Health. In order for the individual to receive his permit, he must take a 40-hour training course prescribed by the State Department of Education and approved by the Division of Health.

A driver is given a breathalyzer test by a State Police officer. If the test shows that he has 0.10 per cent alcohol level in his blood, he is subject to arrest for driving while intoxicated.



The course includes such material as history of alcohol, its effect on the body, alcohol tolerance, scientific laws affecting chemical tests and the specific measurement procedures for determining alcohol levels in the body by approved breath testing methods. The course also includes instruction on maintenance of breath-testing instruments, as well as case preparation and court work incident to enforcement of the law.

Currently, all persons who are licensed to give the breath tests must take a 20-hour reevaluating and requalifying course, which reviews all aspects of the chemical test program covered in the 40-hour course. At this time, the course provides for the calibration and checking the performance of the breath-testing instruments.

The Division of Health also issues permits to qualified laboratory personnel who perform blood alcohol tissue studies. In order to continue to be qualified, the laboratory technician receives from the Division of Health blood specimens with unknown levels of alcohol within expected ranges. The technician runs these tests according to accepted procedures and reports the results to the state agency. If the reports are satisfactory, the technician is certified.

## *Emergency Medical Services*

- Mr. and Mrs. Clayton Edwards and their three children are on a trip. Another car runs a stop sign at a rural intersection and crashes into their vehicle, seriously injuring Mr. Edwards and two of the children. The police came immediately but an hour passed before an ambulance arrived on the scene to take the injured people to the hospital.

- An ambulance arrives on the scene of a motorcycle accident in a Florida city. The rider had suffered a back injury but because the ambulance was not fully equipped with a "backboard," another ambulance had to be called to take the injured man to the hospital. Valuable time was lost.

- Mrs. Charles Jones suffered a heart attack. A fully-equipped ambulance was called to take her to the hospital. Attendants who had been trained in the use of cardiac machines applied emergency treatment and saved her life.

Each year approximately 10 million persons are injured in the United States. Over 100,000 persons are killed in all kinds of accidents. Some thousands of persons die or are crippled permanently as the result of mishandling by untrained ambulance attendants and poorly equipped vehicles.

Floridians need to consider the condition of emergency medical services available in their community.

Would an ambulance arrive on the scene in a few minutes if there is an accident in their home?

If they are involved in an automobile crash, would the attendants be trained to properly handle the injured?

The initial handling at the site of an accident or sickness and during transportation to the hospital may determine whether the patient will have a prolonged illness or die. Sirens and speed sometimes cause trauma in persons who are being transported to the hospital.

## The Ambulance Operators

The first ambulance corps was conceived during the Civil War when a medical officer of the Army of the Potomac devised a system of 300 ambulances to collect and shelter 10,000 wounded soldiers in 24 hours following the battle of Antietam. This was a sharp contrast to earlier battles, such as Bull Run, where the wounded lay on the battlefield for as long as 36 hours.

The first automobile ambulance was in operation in Chicago in 1899. When motorized ambulances made their appearances in World War I, they were a big improvement over the mule-drawn vehicles. From 1917 to the present time, ambulances have improved in equipment and design until now they include complete emergency equipment and incorporate many features essential for the efficient, swift and safe transportation for the injured person. Any ambulance should be equipped to supply all types of emergency first aid.

The 521 ambulances certified in Florida are operated by a wide range of organizations.

- Police or fire departments of some cities operate the emergency medical services.

- Privately-owned, or commercial, ambulance services are operated in many areas of the state. Some of these have contracts

A patient is placed into an ambulance for a trip to the hospital. Most of the private ambulance operator's income comes from non-emergency trips.



with county governments to supply the services for emergencies and indigent persons.

- Funeral directors operate ambulance services as a sideline or for public relations. There is nothing to prohibit a gasoline service station, or some other business enterprise from operating ambulances as an avocation.

- Volunteers frequently man ambulances in rural areas and small towns. Usually these are in conjunction with volunteer fire departments or other groups who solicit funds for the operation of the emergency medical services.

- Military stations frequently have ambulances available for emergencies on the bases or for their personnel living around the military reservations.

- Hospitals used to have their own ambulances staffed by interns and physicians prior to World War II. This practice is now rare, probably because of the high cost of operating a hospital and the growing role of the emergency departments of hospitals.



Many times a geographic area will have several types of ambulance operators working independently of each other. They race their vehicles to the scene of an accident or illness, competing with each other for the care of the sick and injured.

### Financing Emergency Medical Services

Operating an ambulance service takes money and operators need to get across to Floridians that these services do not come cheaply. A well equipped ambulance costs about \$10,000 or more. It takes money to pay the attendants and keep gasoline in the vehicles' tanks.

Some private ambulance operators have contracts with county commissioners to supply these services to the county. These commissioners look upon ambulance services on the same basis as contracts they make with construction companies for roads and public buildings. One ambulance company in an East Coast Florida county has an operating cost of \$140,000. The county pays \$60,000 of this, but the operator must make up the difference through charges for the service. Most of the money comes from non-emergency runs—such as taking Mrs. Jones from a hospital to a nursing home. However, the operator must maintain more than one ambulance because he must be ready when an emergency or disaster arises.

Some county commissioners are looking for good emergency medical services but they expect to find them at \$50 a week. Consequently, gas station attendants and other part-time men who have



An attendant who has been trained in first aid gives the patient oxygen to assist her to breathe.

## *Florida Ambulance Association*

The 14 members of the Florida Ambulance Association serve some three million persons in Florida. The Association is set up to handle disasters in many areas of the state. Should a hurricane or disaster hit a section of Florida, ambulances are rushed to the scene from the nearest points. Through the Association's central communication's office and a system of mutual aid, other ambulances are shifted to the uncovered areas.

other businesses and no training may be running ambulances in some counties. The federal wage and hour law put the financial pressure on many operators and they have had to bow out of the ambulance service business because it was a losing proposition.

In some areas of the state the operation of a commercial ambulance service is not feasible because of the low number of calls. Therefore, it is up to the sheriff or a volunteer's organization to supply the services. Some counties do not have any kind of ambulance service and residents must depend on out-of-county ambulances.

### **Training and Equipment**

Too often people put a siren and red light on a station wagon, add a stretcher and call it an "ambulance." Too often untrained people man the ambulances and try to assist the injured. Many patients are crippled or killed because of improper handling.

A State Highway Patrolman reported that he had stopped at the scene of an accident and a woman involved in the crash was in pain from what he thought was a back injury. While he was in his car calling an ambulance, a well-intending but unwise Good Samaritan yanked the injured woman from the car. When the officer returned to the scene, the woman was dead.

In order to protect the injured, the handling of patients should be done only by trained people. Florida's laws say that it is "unlawful to operate an ambulance in this state unless the driver or the attendant has successfully completed a course in first aid given by the American Red Cross, the U. S. Bureau of Mines, or an equiva-

lent thereof which is approved by the State Board of Health" (now Division of Health). These attendants are then certified by the state health agency.

Some counties have even stricter ambulance codes which state that the ambulances have at least a driver and an attendant—both of whom have had advanced first aid training. An ambulance service in one Florida county has a contract with the sheriff's department to transport mental patients to state hospitals. While not receiving special training, the men who carry out these assignments treat the mentally ill persons as individuals, reassuring them that they will be given the best of care. The absence of uniforms, badges and guns of the policemen make these transfers easier for the patients.

In one Northeast Florida city, members of the fireman's rescue squads are especially trained in the use of cardiac machines so the attendants can give special care to heart attack patients.

The state law also says that the ambulances be adequately equipped for dressing wounds, splinting fractures, administering oxygen and controlling hemorrhage to the extent covered in the first aid course. Some county ambulance codes also give specifications for the length, width and height of ambulances and require a wider range of equipment.



When an emergency call comes into the fire house station, members of this city-operated rescue squad "take the pole" to the ground floor . . .

...where they climb aboard and are off to the emergency in a matter of seconds.



### The Ambulance Run

"We are 10-18" comes the call over the two-way radio to the central dispatch office.

This means that the ambulance is on an emergency run. When the call is "10-97," it means that the ambulance is at the scene. "Signal 4" means that there is an accident; "Signal 7"—a disaster; and when the ambulance is "Running X" it means that the situation is critical and all efforts are being made to get the person to the hospital as quickly as possible. The situation could be a severed limb, a hemorrhaging victim, or some other serious condition.

When the ambulance arrives on the scene of an illness or accident, the attendants are in charge of the victims. When there is violence, the proper local law enforcement authorities are notified—if they are not already on the scene.

Ambulance attendants believe that 75 per cent of the service is reassuring the patient that all will be well; that there is someone in charge. When other persons are hysterical, the ambulance attendants need to calm down the patient. A "special breed" of men are needed to man the ambulances. They must remain calm as they try to staunch the flow of blood, splint a limb, or extract a badly injured person from a wreck. Even physicians, at times, say they



The ambulance attendant notifies the central dispatch officer (above) that they are on the way to the scene of the disaster. Some attendants have received specialized training in the care of heart attacks (opposite page), as well as advanced first aid.

cannot face what ambulance attendants must do. When the ambulance gets to the hospital, the attendants may become "orderlies" for as long as the emergency room physician needs them.

There is much debate about the use of sirens on ambulances, high speeds and the running of red traffic lights. Studies have shown that the time gained by high speeds has not contributed to the number of lives saved. On the other hand, when ambulance drivers stay within the traffic regulations, they are endangering fewer lives—including their own. For a long time wailing sirens, flashing red lights and speed were connected with "vehicles of mercy." Now it is time to change the image of ambulances in the minds of Americans.



## The Need for Adequate Services

Many Floridians cannot go to bed at night with the assurance that they have adequate emergency medical services. Every day there are lives lost because of the lack of adequately trained attendants and drivers and poorly equipped vehicles.

The Division of Health has become increasingly aware of the growing number of Floridians killed and injured on the state's streets and highways. Records from the Division of Health and the Florida Highway Patrol reveal that 8518 persons were killed and over 455,000 persons injured in automobile accidents in the past five years. The immediate care and transportation of those injured in motor accidents need to be explored, improved and coordinated.

The Division of Health has received a federal grant to

- determine the magnitude of the vehicular accident problem as it relates to emergency medical services;
- analyze the services now being provided in Florida;
- assist communities to develop emergency patient care systems;

(Continued on page 226)





One North Florida city has installed an emergency operation center where all calls are received and sent out over a direct reporting system (upper left). A large city map (lower right) shows the location of street emergency call boxes. All calls are recorded on 24-hour, 10-channel tapes (upper





right), and the "frame" room full of complex equipment (lower right) is the "brains" behind the entire system. Through the Emergency Reporting System, ambulances are on their way to all parts of the community in seconds—as soon as a call is received.



- promote specialized training for ambulance attendants, physicians, nurses and other emergency department personnel;
- promote the educational programs for Floridians so they respond effectively to emergency medical problems; and
- promote workshops and forums at community and state levels with emphasis on community emergency medical care systems.

The use of helicopters is one aspect of emergency medical service which may improve the lapse of time from the moment the ambulance service receives the call to the moment the patient arrives at the hospital. These versatile flying machines may change the picture of emergency medical services. Already some areas of the state which are located near military reservations and bases are using or have helicopters available for this purpose.

The properly operated ambulance service has needs which must be met.

- Proper supervision of trained personnel and properly equipped vehicles.
- A central dispatch communications system which will send only those vehicles needed to the scene of an emergency.
- A contract with a governmental unit which will cut out competition, or a government-operated emergency medical service.
- The backing of taxpayers who will accept the responsibility for the cost of supplying themselves with professional emergency medical services.

Should a disaster strike your community or your home, is there an emergency medical service available to take care of you and your family?

### *Safety Councils*

Four safety councils accredited by the National Safety Council are promoting safety in Florida. These are in Jacksonville, Tampa, Fort Lauderdale, and Dade County. In addition there are many other safety groups which are not accredited but which are doing a fine job of promoting safety in their communities. These safety councils promote safety in schools, industries, homes; on farms and highways; in public places and seaports — wherever people work, play or live.

(Illustrations on pages 197, 210 and 211 courtesy of Florida Publishing Company.)

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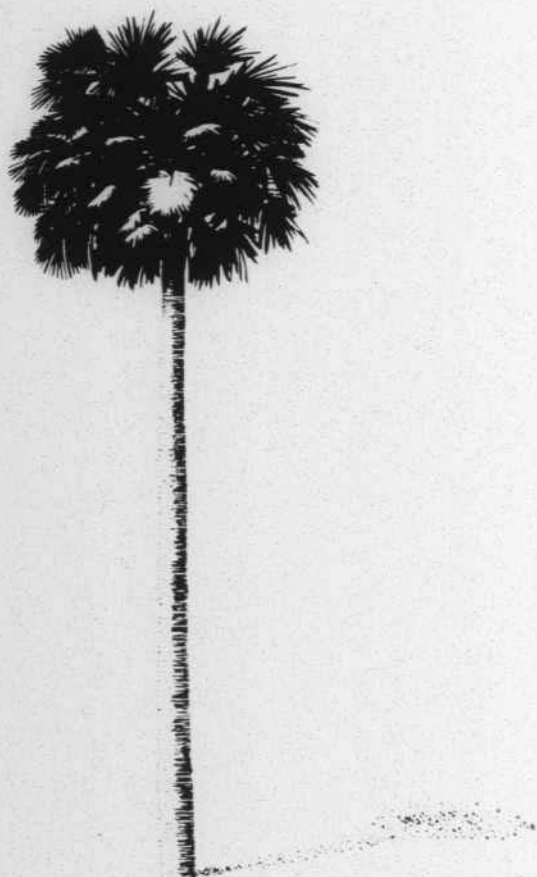
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# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 9

## EPILEPSY—

SEPTEMBER 1969

## —Other Seizure Disorders

FLORIDA STATE LIBRARY

# *EPILEPSY and Other*

This issue of **Florida Health Notes** has been prepared in response to requests, particularly from parents and educators, for information about seizure disorders, especially epilepsy. To meet this need for up-to-date information and attempt to dispel many false notions handed down from the past, we shall tell you about Katie Miller (\*), a little girl with seizures. We shall describe her first known attack and the diagnostic tests which were done. Then we shall repeat many of the questions her parents asked and the answers her doctor gave. In reality, the questions arose and were answered over a considerable period of time, and in a somewhat different order, but we have tried not to miss any of them. It is our hope that you who read this will understand more fully the problems of children and adults who have seizures. Then, instead of being apprehensive or fearful, you can live or work comfortably and helpfully with anyone who has seizures, and assist others to do likewise.

(\*) Not her real name, of course.

## "KATIE"

"Don—come quickly—something's wrong with Katie. I think she's having a fit." Mrs. Miller's voice comes from their three-year-old daughter's bedroom where there had been sounds of activity, unusual so early in the morning. Mr. Miller has a long drive to work, so the two of them get up with the birds, but Katie almost always sleeps for another couple of hours.

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(Cover photo) A child with epilepsy can go to school if her seizures are controlled. A special class or school may be necessary for children who are seriously handicapped.

# er Seizure Disorders

This morning she is lying askew in her bed, arms and legs jerking, her jaw clenched and saliva coming from the corner of her mouth. Although her eyes are partly open, they aren't focused on anything and she doesn't answer when Mrs. Miller tries to get her to respond.

**(Not a pleasant sight, but one seen in more homes than most people realize.)**

Katie is their first child and has never been seriously ill, though Mrs. Miller was in labor longer than expected and the doctor had a little trouble getting Katie to breathe, in the very beginning. Since then she's always seemed healthy and full of pep.

"That's a convulsion, all right—remember Bob, in high school—I saw him have a couple. But he had epilepsy—that **can't** be what Katie has!" And so Don Miller begins to face a fact which they will all live with. Because Katie **does** have epilepsy, though it will be several days before the doctor tells them that all the evidence points that way.

This morning their first thought is to get Katie to the doctor. She is already jerking less, by the time they can begin to think straight, and by the time Don has Katie's doctor on the phone, she seems to be quiet and just sleeping hard.

Katie's doctor is used to calls from frightened parents, about children in convulsions, but he never regards them lightly. One time it can mean the onset of meningitis, another time just a little tyke with tonsillitis and a sudden burst of fever that has fired off a "febrile seizure." Sometimes it means the child has epilepsy, especially the youngsters that have seizures when they are supposed to be sleeping. At any rate, what he'll have to do now is examine Katie to make sure what she has. If it is meningitis, getting the right treatment started early is very important. For tonsillitis he'll

want to get some medicine into her to bring the fever down, though she probably won't have another convulsion if that's the cause—not till she runs a high fever again with something else. "Sometimes when you draw a blank on all the other tests, it's just bound to be epilepsy." And Katie's doctor believes in treating patients with epilepsy just as soon as he suspects it, though he knows some of his colleagues hold other views and sometimes wait until a child has another seizure or two.

"Mr. Miller, it sounds as though Katie is coming out of her convulsion all right. She'll probably sleep for awhile and be a bit fuzzy when she first wakes up. I'll have to see her and find out what's going on. You live pretty far out, so by the time you can get to Memorial Hospital I'll be there for my morning rounds. Go to the Emergency Room and tell them to call me on second floor as soon as you get there. And don't run any red lights, even if she starts to twitch again. She'll be all right." Good sound advice from Katie's doctor. He knows how scared people can get when these things happen.

Two hours later Katie is pretty much her old self, though not exactly happy. She's had her finger stuck, and that nurse over there held her on her side, head down, knees up, so the doctor could do something to her back; felt as though he stuck her with a big pin. "Clear as a crystal— isn't that pretty?" she heard him say. That was while he did the lumbar puncture, to be sure Katie didn't have meningitis, and he'd been pleased to see clear cerebrospinal fluid come through the needle. In meningitis it's usually hazy or cloudy. He couldn't even find a sore throat—and anyway her temperature was about normal.

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#### FLORIDA HEALTH NOTES

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SEPTEMBER 1969



"We aren't finding any of the infectious things, so I'm not going to give her any medicine until we can do one more test, an electroencephalogram. You'll have to bring her back tomorrow afternoon for that—and as soon as we see the tracing we'll have a better idea why she had that seizure." Mrs. Miller's reply to the doctor is a question. "Exactly what is a seizure? What made her do that?"

That was just the beginning. On the following pages we have tried to arrange Mr. and Mrs. Miller's questions and the doctor's answers in an organized way, so they will give you answers to your own questions about epilepsy and other seizure disorders.

### **What is a seizure?**

It is not a disease, but a symptom of a disease. Other terms include convulsion, spell, fit or attack. One definition of a seizure says it is an episode of impairment of consciousness with or without convulsive movements. Impairment of consciousness may range from a few seconds of staring vacantly into space to many minutes, hours or even days of complete unconsciousness. Some persons, during seizures, will walk or talk, but not in their normal manner and without complete awareness of their actions and surroundings.

Seizures are neither "catching" nor painful.

### **How common are seizures?**

Experts estimate that in the United States alone there are 1.7 million persons who have epilepsy. This is nearly one in every 100 persons. Because they know some people try to keep their seizure disorder a secret, some experts think one out of 50 people may have some kind of seizure disorder. Of course there are other causes for seizures besides epilepsy, but that constitutes the major problem.

### **What causes seizures?**

A disturbance of brain function—an "irritation" of the brain—a "sudden, violent disorderly discharge of brain cells."

There are many known causes of such irritation, but sometimes no cause can be found.

## **Does the occurrence of a seizure mean that the person has epilepsy?**

Not necessarily. We will list some of the numerous diseases or conditions in which seizures occur as one of the symptoms:

- \* Acute infections of the brain or its coverings (encephalitis, meningitis, or brain abscess);
- \* Hemorrhage into brain tissue or over its surface (resulting from direct injury at birth or later, or the rupture of an abnormal or diseased blood vessel);
- \* Brain concussion from a blow to the head;
- \* Brain tumor;
- \* Congenital defects of the brain, (including hydrocephalus and incomplete brain development);
- \* Metabolic disorders which result in abnormally low blood sugar (hypoglycemia), low blood calcium (hypocalcemia), high blood phenylalanine (phenylketonuria—"PKU");
- \* Drugs and poisons—(lead, strychnine, atropine). Commonly used drugs, including certain tranquilizers, if taken in excess or by persons with special sensitivity (idiosyncrasy);
- \* Severe kidney disease (uremia);
- \* Eclampsia, a relatively rare complication of pregnancy;
- \* High fever in young children; and
- \* Breath-holding spells in children.

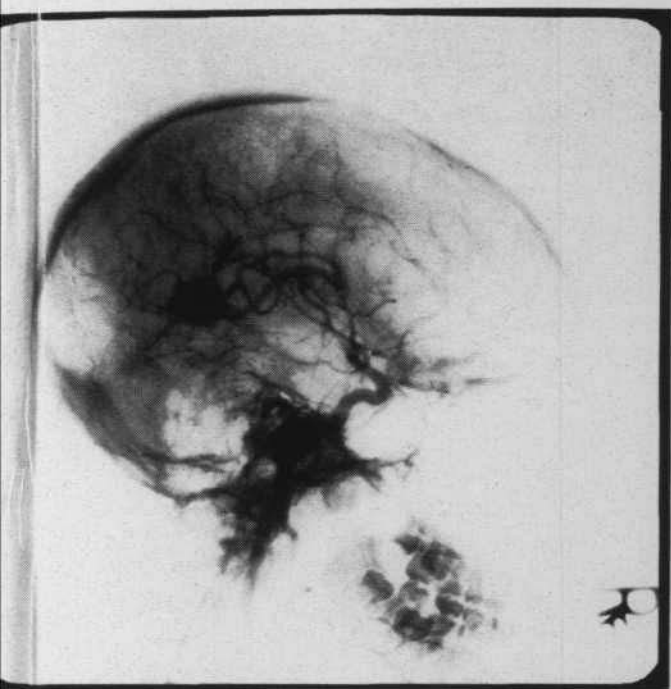
When such a specific problem is diagnosed, the seizure is usually regarded as the result of that disorder instead of epilepsy.

## **When is the diagnosis "epilepsy" made?**

When no such explanation is revealed by thorough study, the patient is said to have seizures of unknown cause or "primary epilepsy." It is also called idiopathic, true, genetic, genuine, essential, or cryptogenic epilepsy. Most authorities will apply the term epilepsy in such circumstances, whether there is only one seizure of undetermined cause or recurrent seizures.

## **Are there other forms of epilepsy?**

Yes. Occasionally seizures which first occur in connection with infection of the brain, damage from toxic substances, or injury, will continue to recur because of permanent brain changes caused by



A tumor (indicated by arrow) is revealed by this X-ray of an infant's head. Such tumors can cause epileptic-like seizures.

these infections or injuries. The resulting disorder is usually called secondary, organic, symptomatic or post-traumatic epilepsy.

However, some authorities believe that brain damage, alone, is not sufficient to explain such recurrent seizures. They believe there was already a tendency or predisposition to seizures, but that before brain damage occurred the "convulsive threshold" was high enough to prevent them. In some manner brain damage lowered the "convulsive threshold" so that seizures could occur. (We might compare it to the "pain threshold" of the skin—consider how much more sensitive a sunburned skin becomes to the slightest touch. The sunburn has lowered the "pain threshold," just as certain things may lower the "convulsive" or "seizure threshold.")

### **When does epilepsy usually show up?**

This varies with the type of seizure. Although seizures can begin at any age, statistics show that they will begin before age 21 in 90 per cent of cases. The majority start during early childhood and early adolescence. Quite a number of girls have their first seizure between the ages of 11 and 13 years, probably related in some way, as yet unknown, to the physiologic changes occurring in the body at that time.

### **Lots of people say epilepsy is inherited. Is that true?**

Today, most authorities on epilepsy express the opinion that much more research must be done before that question can be answered with complete certainty. However, many experts say there is no conclusive proof that epilepsy is passed from parent to child, although sometimes the tendency may be inherited. As you know, some families have a tendency to develop appendicitis or high blood pressure, too, but we do not say they "inherit" these conditions.

### **I have heard that there are different types of epileptic seizures. What are they?**

A classification used by many physicians includes the following varieties of epilepsy, based on the type of seizure:

#### **Grand Mal (pronounced GRAND MAHL)**

This is the most common type, sometimes called "major" or "major motor." In a typical attack there may be a loud groan or cry, followed by sudden loss of consciousness, then generally tonic and clonic movements. In the "tonic" stage there is boardlike rigidity, quickly followed by the "clonic" phase consisting of generalized jerking movements. There may be loss of bladder and bowel control. Breathing may be very heavy or jerky, or at times so shallow that it seems to have stopped altogether. Especially at such times the face may have a bluish tinge.

During attacks some epileptics bite their tongue and drool saliva they cannot swallow. Gradually the jerking decreases and the muscles relax. Such attacks may last a minute or less, or half an hour or more, and may be repeated many times a day, once a week, once a month, or only after several years. When seizures recur so rapidly that there is no recovery of consciousness between them, the patient is in a condition known as "Status Epilepticus," a medical emergency requiring immediate medical treatment.

However, after brief grand mal seizures normal activity often can be resumed after a few minutes. Longer seizures usually are followed by deep "post-convulsive" sleep or coma. When this has passed off, there may be post-convulsive disturbances including headache, vomiting, mental confusion, difficulty in speech, even

brief muscle paralysis, and sometimes strange behavior for a few moments or as long as several days.

Grand mal seizures are thought to occur in about 80 per cent of all cases of epilepsy. This type of seizure is more easily controlled completely than any other variety, except when onset is before the age of one year. In such patients good control may be very hard to achieve, at any age. Actually, with proper care complete control is possible in the majority of persons with grand mal epilepsy.

### **Petit Mal (pronounced PETTY MAHL)**

These seizures are very brief—five, 10, or at most usually only 20 seconds or so. They tend to occur often, sometimes 50 times a day or more. A person having a typical petit mal attack may appear to be merely staring into space. Or there may be jerky movements of the eyes, which may roll upward. The head or arms may also jerk slightly. There is very brief loss of consciousness, which may cause staggering or swaying. Falling is rare. Previous activity is usually resumed immediately after the attack, as though nothing had happened. However, some persons will lose bladder control and urinate during the fleeting period of unconsciousness. Lip smacking may also be noted.

Onset of petit mal seizures is most common in middle childhood. The majority of petit mal seizures are said to occur in children four to eight years old. They usually cease before or during puberty, and are almost unknown in adult life.

A thorough physical examination is essential in diagnosis. It should include neurological tests in which reflexes and sensations are checked.





However, over 50 per cent of persons with petit mal will probably eventually have grand mal seizures too. This development is most apt to appear during adolescence. Because of this strong tendency, patients with petit mal are often started on medication for grand mal first. The medicines used especially for petit mal are added a little later. This approach can be confusing unless the possibility of grand mal is understood.

### **Psychomotor Seizures (SI-ko-MO-ter)**

These are variously referred to as temporal lobe epilepsy, epileptic automatisms or fugues.

Description is difficult, as the spells are so varied. In general we can say that during an attack there may be one or more repetitive, automatic movements which appear purposeless and rather awkward. Involvement of speech may result in repetition of words, which may be incoherent, mumbled or inappropriate. Bizarre behavior may include temper tantrums, belligerent behavior, even violence, and sleep walking or wild running. If several of the things occur, there is often a fixed order. Consciousness is impaired to some degree during these spells. Recollection for events which occur during them is partly or wholly lacking. Duration of attack may vary from seconds to hours or even days.

Diagnosis may be very difficult because some of the same peculiar conduct may result from a behavioral disorder rather than an epileptic one.

Adults are more likely than children to have this form of epilepsy, though it does occur at all ages. Medicines now available are successful in controlling attacks in only about 25 per cent of cases.

### **Minor Motor Seizures**

Other names for this type of epileptic seizure include hypsarrhythmia, infantile spasms, lightning majors, salaam attacks, and akinetic seizures.

Typical spells may begin with a short cry or laugh, then there is sudden bowing of the head. At the same time, the upper extremities are extended and the thighs are drawn up towards the abdomen. In some cases there may be only head nodding or sudden loss of all muscle control, which results in a fall, with almost immediate recovery.

Attacks last only a few seconds, but may be repeated very often, even 50 to 100 times daily, and sometimes in a series, one right after the other, for five minutes or more.

The akinetic variety is the type of epilepsy in which bodily injury is most apt to occur.

Unfortunately, minor motor epilepsy is often associated with mental retardation, which is frequently severe. It may already be evident when seizures begin or show up awhile after their appearance.

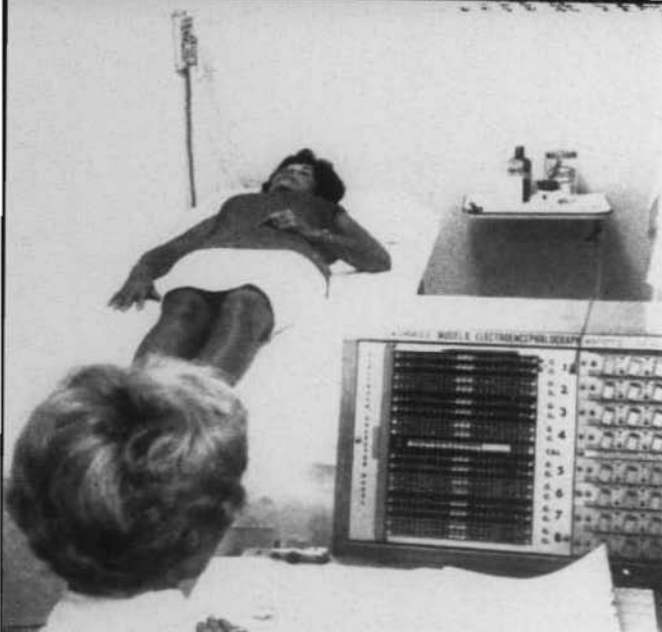
This variety is seen almost entirely on young children. Onset is usually before their first birthday, especially around the third and fourth month. Fortunately only about four or five per cent of all epileptics have this type. It is the only one in which there is real concern about mental retardation. Persons with other types of epilepsy will compare favorably with non-epileptics in intellect, with essentially no greater incidence of mental retardation.

## **Miscellaneous Seizures**

### **Epileptic Variants**

Studies have shown that certain recurrent complaints are due, occasionally, to epilepsy. Included are such disturbances as abdominal pain, headache, vomiting or dizziness. There is no "seizure," in the usual sense of the word, with interruption of consciousness.

Terms applied include autonomic, hypothalamic, thalamic, diencephalic, abdominal or non-convulsive epilepsy, and epileptic equivalent or variant.



The brain generates small amounts of electrical current. When electrodes of a machine called an encephalograph are placed on the head, the electrical currents will pass through wires and make tracings on a moving band of paper (foreground).

### **Focal Seizures**

During such seizures, only one part of the body is involved. The attack may be motor with jerking, or sensory with tingling or loss of feeling in some part of the body. Often there is no loss of consciousness.

### **Jacksonian Seizures**

Such spells usually start with jerking or twitching of one part of the body, such as a foot, spreading first to that entire side of the body, then spreading in the same way on the other side, with consciousness remaining until the convulsion has become a generalized one, of the grand mal type.

### **Do people with seizures get any kind of warning?**

Some do, especially those with grand mal, and occasionally with psychomotor epilepsy. They have what is called an "aura." It may vary from some special scent or taste to a sound of music or a vague, bodily sensation recognizable but not readily described.

Auras are valuable to the doctor as well as to the patient. They may last long enough to give the patient time to reach a less hazardous spot before losing consciousness. They may be specific enough, in type or location, to give the doctor a clue about the origin of the seizure within the brain.

**You said it might take quite a few examinations or tests to find out what caused a seizure. What should be included?**

First of all, let's emphasize that making the correct diagnosis may be a complicated procedure, and sometimes studies have to be repeated more than once before a diagnosis is reached. Now let's consider the steps in making a diagnosis:

**History taking is very important.**

We previously listed a number of conditions in which a seizure may be one of the symptoms. After reading that list you can see why it helps the doctor to know if the patient has had a head injury, has been running a fever, was recently exposed to someone ill, or is taking medicines of any kind. The doctor will be trying to determine whether the seizure is a symptom of some acute infection or other illness, so he can treat and correct that problem, or is due to primary or secondary epilepsy. It is important that parents (and patients who are old enough) cooperate to provide whatever background data the doctor requires and do not hesitate to volunteer information if it seems at all unusual.

**Observation is an important part of the physical examination.**

Very often the seizure is over before the doctor is reached. If he cannot observe it, personally, he will want as accurate a description as possible of all that was observed, and the order in which

it happened. Things which seem trivial may actually be quite important: which part of the body was involved first? when was consciousness lost, if at all?

Parents, other relatives, teachers or the patient (even a relatively young child) may contribute helpful information.

### **Physical Examination is essential.**

This should be a thorough examination, which does not necessarily mean it will be lengthy if the patient is cooperative. It will include a neurologic examination, during which reflexes and sensation will be checked and other reactions evaluated.

**Laboratory Procedures will be selected to provide other needed information.**

#### **Blood**

The physician may want a routine blood count, for evidence of infection or anemia. He may request special studies to see if the level of certain substances normally found in the blood is unusually high or low. Or he may test for abnormal substances, such as poisons.

#### **Urine**

Tests done on urine can reveal infection or other kidney disease and certain poisons.

#### **Cerebrospinal fluid (SER-e-bro-SPINE-ul)**

This fluid, which surrounds the brain and spinal cord, is usually obtained by means of a "lumbar puncture." A special needle is in-



serted carefully into the lower part of the back, to slip between the vertebrae just far enough to reach the fluid surrounding the spinal cord so some can be removed. Examination of this fluid is essential to the diagnosis and proper treatment of such infections as meningitis and encephalitis. Even very sick children often fight this procedure, more because of fear than pain and because they must be held very tightly so the doctor can insert the needle accurately.

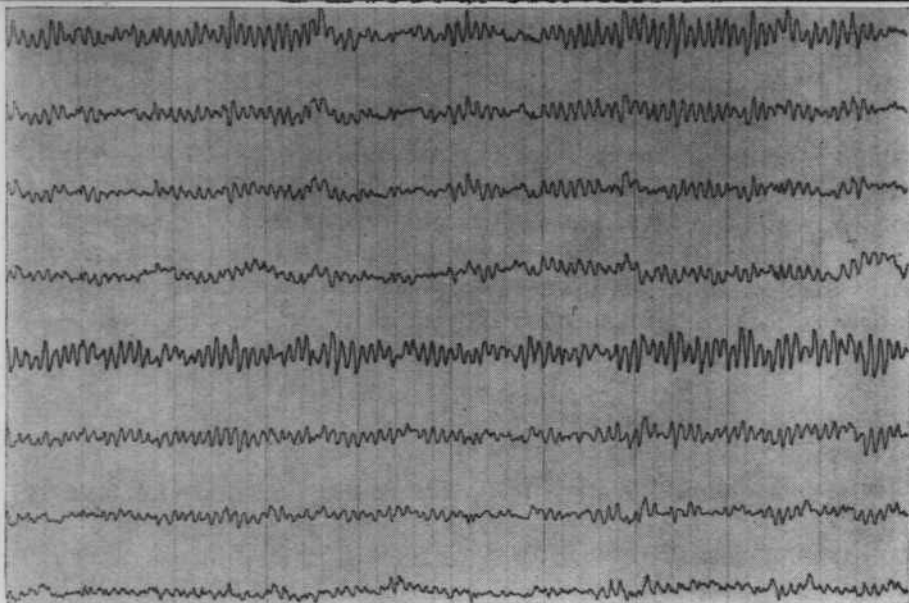
### **Electroencephalogram (el-EK-tro-en-SEF-uh-lo-GRAM)**

This is the "brain wave test," done to study the electrical activity of the brain. Small amounts of electrical current normally are generated in the brain. An instrument called the encephalograph merely records this electrical activity on a moving paper strip, where it creates a pattern of waves. This tracing is the electroencephalogram (EEG).

To have this test done, the subject has small discs (called electrodes) placed on various regions of the scalp. There are wires which run from these to the instrument. To make the discs stay securely in place a harmless sticky substance is applied between them and the scalp, or sometimes bands or caps are used. The patient must then sit or lie quietly for about 20 minutes, occasionally somewhat longer.

Certain "normal" wave patterns are expected from the various areas. When there is a seizure disorder, the wave pattern is usually abnormal at some time. The pattern varies according to the type of seizure disorder, and helps to distinguish between them.

To help demonstrate the abnormal pattern, it may be necessary to have the patient hyperventilate (breathe deeply) for a few minutes. This will bring on a seizure in some patients, especially those with petit mal. The machine will be able to record the brain waves during a seizure and help define the problem.



"Normal" brain waves will make regular patterns on electroencephalograph (EEG) paper (above). During a seizure disorder, the brain sends out irregular brain waves (opposite page). This test helps define the problem of the seizure.

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Sedatives may be given if a sleep-tracing is needed. This is especially necessary for persons whose spells occur only during sleep, which is quite common.

Photic stimulation (with rapidly flickering light) may also produce important changes in the wave pattern.

Although the EEG test is painless, the apparatus may be very frightening to young children, even to some older children and adults. Therefore it is especially important for parents, or other relatives, to understand the harmless nature of the test and provide necessary reassurance. The test itself has no effect upon the brain. It records nothing but the electrical activity—not the thoughts—and does not test mentality.

In addition to its usefulness in diagnosis, the EEG provides a means of additional follow-up after treatment is begun and even after seizures seem to be controlled.

## X-rays

Ordinary x-ray studies rarely give useful information about seizure disorders. However, they may occasionally show evidence of brain tumor, calcium deposit or other abnormal feature which will lead to the diagnosis. Therefore the doctor often asks to have this test made.

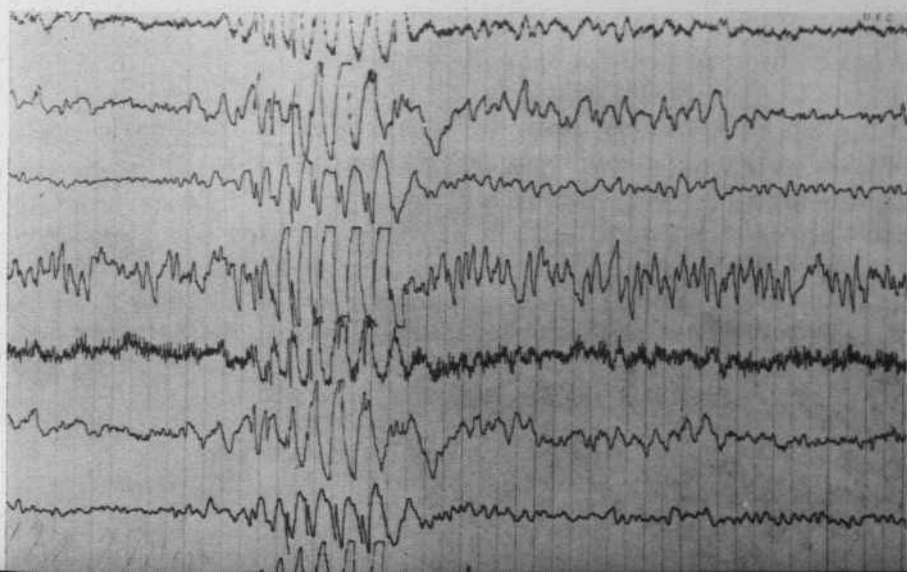
Special x-ray studies will be done when there is a definite suspicion of a tumor or abnormal blood vessel within the skull.

### **Pneumoencephalograms (NU-mo-en-SEF-uh-lo-GRAMS)**

These special studies are made by withdrawing some of the cerebrospinal fluid, usually through a lumbar puncture needle, and injecting air or oxygen in its place, then taking skull x-rays. The air should make the cavities within the brain, and the spaces around it, show up so it is possible to tell if they are enlarged, misshapen or narrowed. Rather severe headache may persist for the next several days.

### **Cerebral Angiography (SER-e-brul an-ge—OG-ruf-e)**

This involves introducing an opaque liquid into the circulation where it will go directly into the arteries of the brain while x-rays



are being taken of the head. Narrowed or otherwise abnormal vessels, or vessels having an unusual course, may show up in the x-rays so the abnormality can be recognized.

The physician will decide which tests need to be done. Finally he combines information from the history, physical and neurological examinations and the various tests, to arrive at a diagnosis. If the diagnosis is epilepsy, the history and electroencephalogram often are the most helpful. Sometimes all findings seem normal and repeated tests are necessary.

### **Can seizures be cured?**

Since seizures are a symptom, not a disease, the answer to that will vary with the underlying cause. Seizures which occur because of acute infection, poisons, tumors, and such problems usually cease after that cause is eliminated. However, if such conditions result in permanent brain damage, seizures then may continue to occur and are attributed to secondary epilepsy. Usually it is not possible to eliminate this residual brain irritation, so we cannot cure the disease. Instead we treat the symptom, trying to stop the seizures or reduce their frequency and/or severity. At the present time, the same applies to primary epilepsy, for which no cause is known. Even though we succeed in stopping the seizures altogether, we cannot be sure the epilepsy is "cured."

### **What is the treatment for epileptic seizures?**

That question will have to be answered in two parts—care during a seizure and long term medical management.

#### **Care during a seizure.**

Since most seizures are over quickly, there is little time to give



The physician may want a blood study for evidence of infection, anemia or metabolic disorder which may be causing the seizures. Special laboratory studies may be necessary to determine if certain substances in the blood, such as blood sugar or calcium, is unusually high or low.

assistance, and little is actually needed. This is especially true for petit mal and minor motor seizures.

It is of prime importance, during longer attacks, to protect the patient from injury. Ordinarily it is best not to try to move someone who is convulsing, unless the spot where they fall is a dangerous one. Position them so they will not strike out against hard or sharp objects or glass, but do not try to restrain arms, legs or trunk from jerking. They should not be turned on their back but preferably on one side so saliva or vomited material can run from the mouth freely, rather than being inhaled into the trachea and lungs. False teeth and glasses should be removed and put where they won't be broken or lost. Tight clothing, especially ties and collars, should be loosened.

Efforts to insert an object into the mouth can be limited to times when the patient is biting his cheek or tongue or appears to have considerable trouble breathing. Appropriate objects are a rolled up handkerchief, folded belt or flat wooden item like a tongue depressor padded with soft cloth or gauze. Insert such objects along the inside of the cheek and then between the **back** teeth; do not force. Never use unprotected metal items such as spoon handles. Never try to wedge objects between the front teeth; you may do



much more harm than good. A broken tooth, inhaled can become a more serious problem than the seizure.

Efforts to restore consciousness are useless, so do not dash cold water on the patient or put him in a hot bath or shake or otherwise try to waken him. He will wake up naturally but only when the attack has reached the proper stage, often within ten minutes or less, though it may take much longer.

As consciousness returns, ask the patient what you can do to help. These people need to be given encouragement and spared embarrassment. This is especially necessary if they have lost control of bladder or bowels during the attack.

Longer attacks require medical attention. It is best to contact the patient's doctor for advice before trying to move a patient. If you cannot reach the doctor or his office nurse, your local hospital will probably have someone who can advise you. It is a poor idea to drive across town at break neck speed, or to set out for some destination where you are not sure help will be on hand. Staying calm and cool headed may be very difficult, but it is the best thing you

A child with epilepsy can join in many sports and activities. He should be told of his condition and allowed to live as normal a life as possible.



can do for anyone having a seizure. Later you can take time to feel "all shook up."

### **Long term medical management**

There is no magic cure for epilepsy, but today there are some very fine medications to help control seizures. The physician's selection will be based on several things including the type of epilepsy the patient has, or is thought to have, and the safety of the medication. Some medicines may be more dramatic in their results than others but have side-effects which can be very upsetting to the patient or sometimes damaging to the kidneys, blood forming organs or other systems of the body. Therefore they will not be considered unless results are very poor with other medicines or combinations of them.

In order to clear up an infection, a physician sometimes has to change antibiotics or give more than one and make changes in the dosage. In the same way, he may have to try several anti-convulsant drugs in treating epilepsy—alone or in combination. He may have to juggle the dose around before he can get good seizure control without making the patient too drowsy to go to school or to work or to do housework. It is sometimes easier on the patient and everyone around him, to settle on a drug or dosage which doesn't stop the attacks altogether, if complete control is accompanied by such side effects as severe drowsiness, irritability or staggering gait.

Another form of treatment, used more commonly in some regions than in others, is a very special diet called "Ketogenic." It seems to be effective in certain types of epilepsy, especially minor motor, but because of its high fat content it is not acceptable to all children. If tried, it must be followed rigidly for two years or more for maximum benefits.

Seizure patients may be required by their doctor to have frequent physical examinations and tests of blood, urine or even liver function, especially when certain drugs are first given. Later the tests may be needed less often, as the body's response to

the medicine becomes known. It is very important that people understand and cooperate about getting these examinations made as ordered by the doctor. It is also very important that the medicines prescribed be given in the amounts ordered, at the times specified, and that they never be stopped except upon the advice of the physician in charge. However, the physician needs to know promptly if new signs or symptoms develop, as they might be due to the treatment.

Running out of medicine because of failure to plan ahead and get a prescription refilled is almost inexcusable. Lack of money should not be an excuse, either, as funds are available from several sources if real financial hardship is made known.

These warnings are meant to explain the need for good supervision by a physician and close cooperation by patient, parents or other relatives. Many patients can then be treated successfully, so that seizures will be much less troublesome to them. They may cease altogether or occur only every few months or years.

### **What percentage of epileptics respond well to treatment?**

It is estimated that 15 per cent will do poorly on any available treatment; 25 per cent will have enough reduction in seizures so they can live fairly normal lives; and 60 per cent will become seizure free. Recurrence is less likely if patients are kept on medication for a long time (several years) after their last seizure. In fact, some will remain on medication all their lives, no matter how long ago they had their last spell.

### **Does epilepsy prove to be a serious handicap throughout life?**

Epileptics and their parents need to realize that, even when seizures are currently well controlled or ceased several years ago, this disorder will impose some restrictions on various aspects of living. The greatest handicap the controlled epileptic must face is public ignorance and adherence to old false beliefs about epilepsy.

He is likely to be regarded as "different" and denied some social, recreational and employment opportunities, often quite needlessly. Adverse attitudes are changing, but slowly. The child or adult who still has seizures will be limited further, because of his actual inability to participate safely in certain physical activities, which may be involved in play and/or work. It will be up to patient, parents, or other relatives to learn to live with the unfair limitations imposed by ignorance and those which are necessary for the epileptic's own safety.

About 15 per cent of epileptics will be seriously handicapped by frequent seizures and a portion of these will also be mentally retarded, some even requiring institutional care. The majority, however, will be quite "normal"—between seizures—if they are allowed to be. Pampering and lax discipline usually do the epileptic more harm than good. Like any other person with a chronic disorder, the epileptic can easily develop emotional problems, fearing he may have a seizure in public, or may be shunned because of his disease. This happens to the physically crippled, the deaf, and many other handicapped persons. Home is one place where the epileptic surely needs to be treated the same as everyone else; loved, disciplined, petted and given chores and responsibilities to the same extent as other family members, unless the physician advises otherwise. Having to take medicine regularly is enough of an ever-present reminder that the epileptic has a special problem; it is unwise to keep reminding him in other ways, when it can be avoided.

### **Education is essential**

Fortunately in Florida the policy in the public schools is to include epileptic students in regular classes unless frequency of seizures or mental impairment makes normal participation impossible. Some are enrolled in special education classes when seizure control and learning capacity are not adequate for regular class placement. Teachers are encouraged to assume the same attitude recommended for parents and the rest of the family—no special favors for the epileptic.

Generally it is advisable that school authorities know that a student entering any grade has epilepsy. The type, duration and frequency of seizure which may be expected and the usual care given during an attack should be explained. This stimulates school personnel to learn more about epilepsy, if their experience is limited. It enables them to handle an occasional seizure with composure, meanwhile reassuring other pupils. Educators will follow the physician's recommendations about an epileptic child's participation in **sports**. Since epileptics will often have more seizures when asleep or inactive than at other times, it is generally recommended that they not be denied normal recreational participation except for activities involving height, particularly.

A question often arises about **bicycle riding**. It is suggested that if a child who already rides a bicycle develops seizures, which become well controlled, he can probably be allowed to ride the bicycle again, except in traffic, and probably will be as safe as other children. If he has not learned before seizures start, it is practical to discourage the idea and divert attention to something else.

The advisability of **swimming** is also questioned. Certainly no epileptic should swim alone or in the company of a poor or inexperienced swimmer, or one who is unaware his companion might have a seizure. However, any person—epileptic or not—who does not know how to swim may some day drown for lack of elementary swimming skills. With that in view, it seems appropriate that well-controlled epileptics be allowed to swim in relatively safe waters when accompanied by an experienced swimmer who knows about the seizure problem. The final decision about this, bicycling and strenuous sports must be made by the family and the child's physician, who is best qualified to decide.

### **Can an epileptic obtain a driver's license?**

Regulations on this subject vary from state to state. Apparently a few states still have laws which make it illegal for epileptics to





Teachers and school authorities should be informed that a student has epilepsy. They should know the type, duration and frequency of seizures so they can handle the situation handily and reassure other children.

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drive an automobile. In others, an epileptic can be licensed when seizures have not occurred for various periods of time, (e.g. three years). Licenses may be granted for shorter periods than usual and require appearance before a special medical board before approval is granted for renewal.

In Florida, Rules 295A-1.09 and 295A-1.10 of the Department of Public Safety apply to licensing of persons with sudden attacks of "unconsciousness, dizziness, epilepsy, catalepsy, seizures and fainting spells," or other similar disorders. To obtain approval from the Department of Public Safety to apply for the driver's license examination, an applicant with such disorder must forward to the Department a medical report from a licensed physician. The report must state that the physician believes the applicant can drive safely.

Thus Florida physicians have the major responsibility for determining the fitness of epileptics to drive on our public thoroughfares. In many cases they must rely upon the applicant's word for

the date of the last seizure, as they cannot know, personally, the facts in each case.

There is obviously a great temptation for those who still have occasional seizures (but need to drive a car for business or social reasons) to conceal the truth. This is unwise and unfair to all concerned. The life the uncontrolled epileptic saves by **not** getting behind the wheel just **might be his own** or his passenger's. On the other hand, there are many epileptics who have been seizure free for at least several years and will probably remain so. Many experts agree these individuals can be licensed safely and should be. Fortunately for them, Florida's statutes are not unreasonable.

**Is there any reason epileptics should not marry? What about their having children?**

Generally speaking, there is no reason they should not marry. Of course there are exceptions. Some epileptics have such a severe form of epilepsy that they could not help being a great burden to the one they marry, so they do well to remain single. Another group to which this applies are severely mentally retarded.

The vast majority of epileptics, whose seizures are not very frequent, would not be advised against marriage. It is groundless to fear that marriage will make epilepsy worse. Growing up believing that marriage is not for them may, in fact, intensify the emotional problems of epileptics and may make them increasingly anti-social. However, it is very important that any epileptic seriously contemplating marriage makes sure that his or her intended mate really knows about epilepsy. Both need to be aware of the medical and socioeconomic problems epileptics face.

In a few states there are still restrictive laws about marriage of epileptics. Fortunately, Florida is not among those.

We have said before that the question of "inheritance" of epilepsy can't be completely settled without much more study. But

enough is known to lead many experts to believe that the likelihood of an epileptic producing an epileptic child is not much greater than for the non-epileptic. Some may not wish to take this small chance, but in general we believe the decision should be left up to them.

The family's ability to provide a child with reasonable financial and emotional security is probably of greater importance than genetic considerations in counseling most epileptics about family planning.

When female epileptics become pregnant their anti-convulsant medications are continued as usual. Occasionally there will be some increase in seizures requiring an adjustment in dosage. On rare occasions pregnancy will aggravate a seizure disorder so severely that the physician will advise against future pregnancies. Standard

A child with epilepsy needs exercise as much as other children. Normal recreation should be allowed, except those activities involving height—such as swings or jungle gyms.



Employment should not be a problem for the controlled epileptic. Young people with epilepsy should be guided in the selection of a vocation or profession suited to the severity of their problem.



medications presently used in the treatment of epilepsy have not been found to affect the unborn infant adversely. However, as new treatments are developed this possibility should be borne in mind.

Probably the most important consideration for the female epileptic regarding pregnancy is the severity of her seizure disorder. Obviously if it is too severe it would prevent her from giving adequate care to her infant.

**What is the employment picture for epileptics? Are they excluded from some jobs or professions?**

The picture is improving, but employers need to be better informed about the acceptability of epileptics as employees. Appropriate placement is important, as employers have to be concerned about their firm's safety record. This should not be impaired unless epileptics are hired to work at heights, on machinery not manually controlled, or operating an automobile if seizures still occur occasionally.

Young epileptics should be guided in the selection of vocational or professional training suited to the severity of their seizure problem. Persons with controlled or infrequent seizures can do very well

as stenographers, bookkeepers, photographers, librarians, gardeners and florists, artisans of many types, machinists on manually operated equipment, in professions such as law or medicine (usually in specialties with limited patient or client contact, not involving surgical procedures) and education (among adults). The list could be much longer, but we know epileptics who are successful in each of the activities listed. Vocational guidance counselors were of great assistance to many of them in making the decisions involved.

Each epileptic who, having obtained a position, performs to the best of his or her ability and does not dwell on past rebuffs or disappointments performs a service to other epileptics. Most employers and coworkers, once they become acquainted with epileptics, soon accept them for their own worth and give little thought to their epilepsy, though an occasional seizure may occur. Personality problems will wreak more havoc in a plant or office than an occasional seizure. Epileptics who can learn to accept their disability and avoid letting rebuffs distort their personality can make out all right in the working world.

### "KATIE" GROWS UP

Little girls have a way of suddenly becoming teenagers! Now Katie has turned 15 and despises being called by her "baby name." She is "Kate," if you please.

During the 12 years we've known them, the Millers have had another girl and a boy. As Mrs. Miller tells it now, "I'm glad the second one was already on the way when we found out Kate had epilepsy. I might have been afraid to have another baby, otherwise. We both had a lot of old fashioned ideas about its always being hereditary and making children feeble minded, or that you had to raise them like some kind of invalid. At first the medicine did keep Kate sort of dopey, and that upset me, too—so much so that when some misguided soul told me it was habit forming, I just plain stopped giving it. Well, that did it. Kate had another seizure, worse than she'd had before, and right in Sunday School. Of course, I had to tell Don and the doctor what I had done."



She confirms, "You live and learn. Believe me, I realized right then that the doctor was right. He couldn't help Kate unless we all cooperated. He wasn't mean about it. In fact, he said some things I've remembered gratefully ever since."

This is what he said, "There are many children with ailments far worse than epilepsy, children who can never be well, who are often in pain, who have diseases which will eventually be fatal. Your little girl is 'ill' only when she has a seizure. Deaths from epilepsy are rare, even from accidents due to seizures. There will be a few things she shouldn't do, for her own safety, as long as she has seizures, and if we cannot stop them completely, they will embarrass and upset her. You will have to help her to get used to that, so she won't become too sensitive about what people think and become a poor mixer. Help her to live as normally as possible and see that the rest of you do, too."

"I suppose we've been lucky. There were times when she had quite a lot of seizures, like right after Billy was born. I think it upset her the way everyone fussed so over him. But she hasn't had any since she was eleven. Doctor Jim might have stopped the medicine two years later, but then she was thirteen. He says adolescence is one of the risky times for epileptics and it would be safer to continue the medicine awhile longer. She grumbles about it, sometimes, but she understands and so do we. I used to worry every time the other two made a funny noise or twitched a muscle, but they're fine. Nobody's ever been very sick. Kate had had all her shots when she was a baby and doctor said to go ahead with her booster shots. So they've all had all their immunizations, too."

At that point Kate came in from school. "Hi! Have you heard my latest ambition? I've decided to be a medical secretary. I'm taking typing already, and I'm pretty good at it, and I've been able to say medical words like encephalogram ever since I can remember. I know some places won't hire you if you say you had epilepsy, even if it's been a long time since your last seizure. But I figure if I'm pretty good, that will help. Of course, Dr. Jim says I should go to college and maybe I will." A pause and then, "Mom, have you seen my tennis racket?" A pretty normal teenager, don't you agree?

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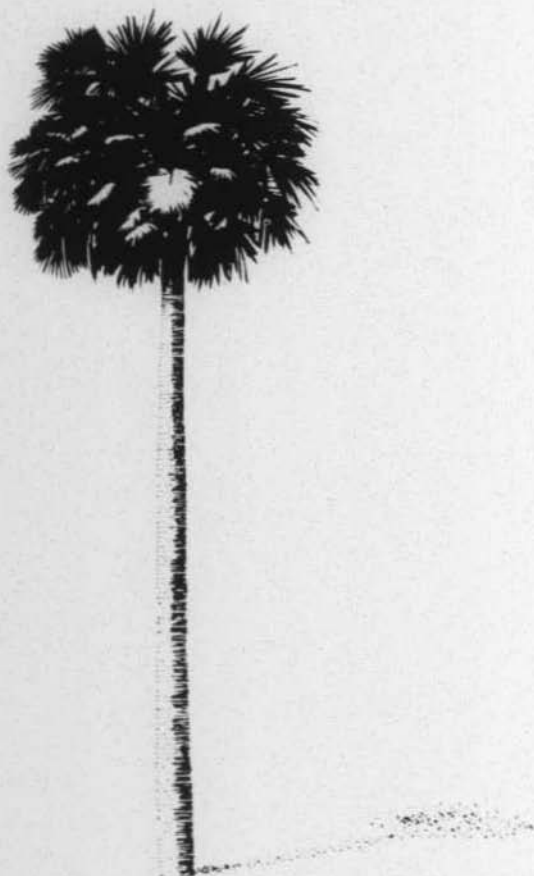
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# FLORIDA HEALTH NOTE



VOLUME 61 — NO. 10

**DRUGS and**

OCTOBER

1969

**Substance Abuse**

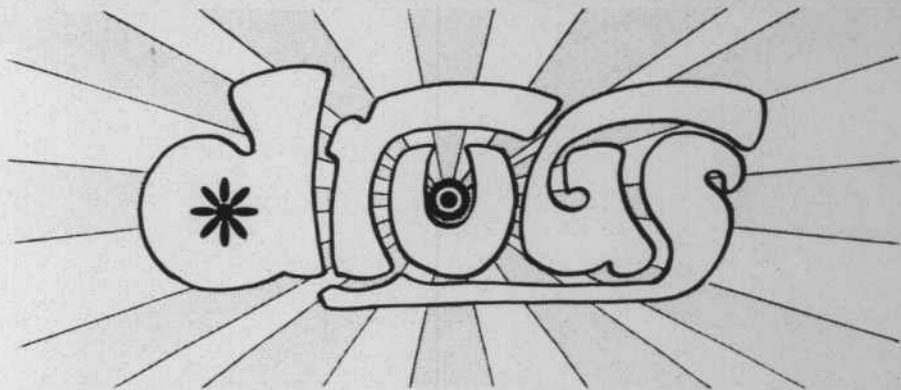
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(Cover photo) Stimulating drugs can "turn a person on" but when the spree is over the individual may collapse from exhaustion.

To get a "kick," or immediate effect out of narcotics, users of heroin, amphetamines or other drugs "main-line" or inject the drugs directly into the veins.





## and Substance Abuse

\* A young man, under the effects of LSD, walked out of a third story window with the belief that he had supernatural powers and he could fly.

\* A youngster, under the influence of marijuana, drove his automobile straight into a brick wall and killed himself and his girl friend.

\* A young mother, who used heroin because she believed she was suffering intense pain months after surgery, went insane during a "drying out" period.

\* A young girl was taken to the psychiatric ward of a hospital for treatment after she had been given LSD by a boy friend.

\* Two teenagers peddled LSD and other drugs to their classmates at \$6 a "trip." They claimed to have 600 customers.

\* A youngster made regular trips from Florida to California where he purchased and brought back thousands of dollars of marijuana, hashish, LSD and other drugs.

The world of drugs and substances capable of enslaving our bodies and minds is all around us. Many persons take pills and capsules, beverages and powders to pep them up so they can continue their working days, or slow themselves down so they can sleep.

The tired businessman takes an amphetamine with his cocktail to furnish the lift to extend his hard day into the night.

The housewife takes a barbiturate to calm herself down after getting the children off for school, and her husband off to the office.

The truck driver takes a little amphetamine to keep driving for a few more hours and becomes a danger on the highways.

The athlete takes drugs to overcome pain and to "get up" for the big game.

This issue of **Florida Health Notes** will take you into the world of drugs and substances which are abused by people. It will give you the reasons they use them, the scope of the problem, the legal aspects of narcotics and dangerous drugs, and what is being done for those who are caught up in this frightening world of drug addiction and substance abuse.

### **Substances for Abuse**

Most of us take drugs for medical reasons. People take aspirin for headaches or colds. Heart patients take digitalis; people with peptic ulcers take antacids. The list is long.

Drugs are chemicals that act upon the body's own chemistry. Sometimes they substitute for chemicals that the body lacks, or improve our ability to function by stepping up or slowing down the activity of our glands and organs. Drugs can promote and preserve good health when they are taken on the advice of a physician, or according to the directions on the bottle's label. They can alleviate pain and promote cures for many illnesses.

In primitive times drugs served religious, magical and social needs. Informal control of drugs was based on habits, beliefs and customs. Acceptance was based on certain forms of behavior allowed by the group, while other uses of drugs were not accepted. In our society drugs serve more limited goals—the treatment and prevention of disease.

The misuse of drugs and other substances, or the taking of drugs without professional advice or direction, can injure the vital parts of the body, the liver, kidneys, heart or brain. Abuse of drugs can lead to body dependence, either physically or psychologically, or

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#### **FLORIDA HEALTH NOTES**

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Many drugs have proper places in medical treatment but abuse is illegal and dangerous.



both, and can cripple a person in body or mind—in some cases permanently. Drug dependence comes from taking certain drugs regularly and often in increasing amounts and at shorter intervals.

Drug abuse does not always result in dependency. Physical and psychological dependency result from the use of narcotics, such as heroin. Abuse of marijuana can cause psychological dependency which is harmful in itself.

The most often abused drugs fall into four major categories:

- \* The narcotics (pain killers) such as heroin, codeine and morphine known as Harry, Scat or horse.
- \* The sedatives—barbiturates, tranquilizers and alcohol—known as goofballs, barbs, yellow jackets, blue heavens.
- \* The stimulants—amphetamines—known as speed, pep pills, bennies, drivers, footballs.
- \* The hallucinogens—LSD—known as Big D, cubes, trips; and marijuana—known as grass and pot.

Most of the narcotics, barbiturates and amphetamines have a proper place in medical treatment of physical and mental illnesses. However, this is not true of the hallucinogens.

### **The Hard Narcotics**

When a patient has an acute pain, the physician tries to get to the cause of the pain. Sometimes, this isn't possible, or as part

of the treatment he will prescribe morphine or a similar pain killer which acts upon the central nervous system to alleviate the pain. The patient gets the drug only when the significant pain returns. The drugs are used for short-term, acute pain resulting from surgery, fractures, burns and, for such terminal illness as cancer.

In time the central nervous system cells become dependent on the narcotic's presence and adjust their activity to the drug. When they don't have their hunger satisfied, the withdrawal symptoms of sweating, muscle spasms, vomiting and diarrhea appear.

Heroin is a depressant. It relieves and dulls anxieties and tensions; it diminishes the desire for food and other needs. It produces drowsiness and causes inability to concentrate and lessens physical activity. It impairs mental and physical performance.

An overdose of heroin may lead to respiratory failure, coma and death. As the addict takes the drug in increasingly larger amounts, he builds up a desire to have the drug in larger quantities.

The price on abuse of hard narcotics is high. Chronic users develop both physical and psychological dependency and a person will neglect his personal needs and malnutrition may set in. The addict has his mind fixed on only one thing—to get drugs, and this becomes a preoccupation. The ritual of the hypodermic needle and the injecting of the drugs directly into the veins may lead to infection. Abscesses may develop by the use of unsterile instruments. A pregnant addict will continue the habit, even though she knows her baby will also be addicted—and may die if it does not receive medical treatment at birth.

Cocaine, another of the hard narcotics, comes from the cocoa plant of South and Central America. It was once widely used in the United States as a local anesthetic. But now it is replaced by synthetic substitutes, such as procaine and novocaine.

The drug appears as an odorless white crystalline powder resembling snow. It may be sniffed through the nostrils or injected intravenously directly into the bloodstream. The euphoric sensations (exultation, animation and excessive energy) are short lived and replaced by anxiety and depression. Sometimes the drug is combined with heroin and the combination is known as a "speed-ball."

Paregoric and codeine are other narcotics which are abused. The former is prescribed for intestinal troubles; the latter is a common ingredient in cough syrup and pain medications. When taken as directed by a physician, they do not present problems.

### **The Depressants for Relaxing**

Barbiturates are sedatives which play an important part in medical practice. Either singly, or as the principal ingredients in mixtures, they can be effective in treating epilepsy, insomnia, and emotional and mental illnesses.

Until the middle of the 19th Century, persons looking for substances to ease their tensions had to depend on herbs and alcoholic beverages. In the 1850's new chemical compounds known as bromides were introduced as sedatives. During the 1930's, barbiturates were introduced and in 1950's tranquilizers became available. Short-acting barbiturates, such as pentobarbital and amobarbital, and tranquilizers are the depressants which are most often misused.

Because barbiturate prescriptions must be ordered by physicians and drugstores that dispense these drugs are controlled by law, huge quantities sufficient to maintain abuse come largely through illegal channels. Persons who become dependent may have first used barbiturates under a doctor's care. Other people simply take up the habit when they learn about the drug's intoxicating effects and begin to experiment and self-prescribe.

Many barbiturate users are "silent abusers." They take the pills in the privacy of their homes and do not cause disturbances in their community. These are mainly middle-aged and older persons. They are not often found using other kinds of drugs.

Most abusers of barbiturates who become dependent are individuals who find life's tensions and anxieties unbearable, and feel the need of security and well-being they believe the drugs give them. When the drugs' effects wear off, the individuals are left confused and irritable, uncoordinated and depressed. The person is faced with the old tensions and anxieties.

Some extreme users may be made bedridden in a constant state of semi-stupor. Suicide can occur through overdoses—intentionally or otherwise and in recent years several famous persons have died through overdoses of barbiturates. When combined with another drug, alcohol or one of the narcotics, each drug increases the action of the other and the abuser gets a strange result. When





The hallucinogens (mind-benders) cause the abuser to see distortions. Solid things pulsate. Time stands still. The environment takes on new perspectives. Although the drug gives the ability to "tune out" one's surroundings, abuse of the drugs can lead to psychological dependency.

combined with a stimulant, the abuser gets on a seesaw of sedation and stimulation.

A long term abuse of barbiturates causes strong physical dependence, making withdrawal a serious business. Withdrawal from narcotics is bad enough, but the withdrawal from barbiturates, if abrupt and sudden, can be fatal.

### **Stimulants for Kicks**

Like barbiturates, amphetamines and related stimulants are available legally only by prescription, but supplies move briskly through illegal channels. Some people use stimulants to overcome depression or combat fatigue. More numerous are those who take them not to attain feelings of well-being, but to go beyond to excitement and supersensitivity. Generally these are younger people who experiment with a variety of drugs and who may abuse a combination of them.

When large doses of amphetamines are taken, either orally or by injection, tolerance can build up quickly and then larger and larger doses become necessary to attain the desired results. A person can over-estimate his physical capabilities. Drugs can mask underlying fatigue caused by the unusual expenditure of energy and the lack of rest. When the amphetamine spree is over a person may collapse from exhaustion. He can also suffer damage to his heart and circulatory system.

Another possible complication in individuals who take sizable doses for a long time is mental illness. This is known as "amphetamine psychosis." He may have hallucinations—that is seeing and hearing things that are not present, and believe that others are plotting to harm him.

Withdrawal from amphetamines is usually physically painless. However, psychologically, abrupt withdrawal can bring serious depressions with potential suicide. As with barbiturates, withdrawals from amphetamines should be under a physician's supervision.

### **The Hallucinogens—Mind Benders**

Hallucinogens are unique in that they have no accepted use in medical practice. They can also cause psychological dependence. They are drugs that cause distortions of perception and dream images. Actually there are fewer hallucinations than distortions and individuals see or hear things in a different way than they actually are.

First in popularity is marijuana. Other substances with the same property for causing distortion are morning glory seeds, a Mexican mushroom—psilocybe, buttons of the peyote cactus, and lysergic acid diethylamide (LSD).

### **LSD—The False Illusion**

LSD, though odorless, colorless and tasteless, is one of the most potent drugs known. An amount smaller than a grain of salt is all that is needed for a person to become intoxicated.

The drug does not cause physical dependence with withdrawal symptoms, but it does cause severe psychological dependence and addicts desire to continue using it. Abusers usually try to get others to try LSD. Mothers give LSD to their infants; brothers encourage their sisters to use it; addicts encourage close friends to experiment; individuals will take life savings and purchase LSD for complete strangers.

LSD was first developed for experimental use and research was limited to such fields as schizophrenia (a mental disorder in which the patient lives part or all of his life in a fantasy) or alcohol addiction. However, some of the drug escaped from the laboratory and became invested with an aura of magic, seemingly offering man the panacea for many of his problems.

People told of "trips" of new impressions and expansions of the mind. LSD was widely publicized as a consciousness-expanding drug which increased creativity in art and music. But soon clinics and medical emergency rooms of hospitals were being filled with an increasingly large number of persons who had experimented with LSD. Many persons required psychiatric hospitalization for several months; a number of suicides were reported; and users began to tell of "bad" trips.

The dangers became recognized. The one legal manufacturer of the drug in the United States stopped production and turned his remaining supply over to the National Institute of Mental Health and several authorized investigators who joined together to do research with the drug. Today there is no legal manufacturer of LSD and the sale, manufacture or possession of LSD and similar drugs is illegal.

The effects of LSD on the human mind is still unknown. One California study said that LSD may interfere with the brain process. The drug may permit the overflow of the senses and the lessening or breaking down of the personality. Persons on "trips" report seeing music and hearing pictures but they are actually preceiving actual objects or sounds as accentuated or distorted—or both. Faces melt away; bodies merge with walls; solid items pulsate. These are illusions rather than true hallucinations. Distortion is perceiving things that are seen but in an unreal fashion. Hallucination is seeing things that are non-existent.

Perhaps one of the worst aspects of LSD is that it upsets the chromosomes in the body. A woman who uses LSD at one time may give birth to a deformed infant years later. After taking one dose, additional trips may be "taken" months or years later.

"Bad" trips are frequent. One girl committed suicide because she thought she was being eaten by animals while on a bad trip. A boy reached for a daisy while under the influence of LSD and it broke off, started screaming at him, and attacked him. Skilled professionals, who become addicted to LSD, abandon their work or practice, lose interest in their careers, and spend their time contemplating their experiences of LSD. Students who were academically successful prior to taking LSD, lose interest in studying and future careers, and drop out of school. Some creative persons mistakenly believe that the use of LSD improves their talents, but actually their work deteriorates and observers recognize few or no improvements.

## Marijuana—Dangerous and Illegal

Marijuana is probably abused by more youths than any other drug. It comes from the flowering tops of the female hemp plant. When dried, powdered and rolled into cigarettes called "reefers," it is available through various illegal channels to youngsters in Florida. Smoking marijuana, or not, like LSD, produces feelings of sensory distortion. One of the dangers of marijuana is that the user will use the drug as a psychological crutch and become dependent upon it. He may go on to stronger substances, including heroin. Although marijuana does not lead inevitably to heroin abuse, it is a fact that most heroin users experimented first with marijuana.

Pot parties are common among certain groups in college and high school students. Smoking marijuana carries the excitement of doing something illegal and the satisfaction of rebellion against authority. Most youngsters who try pot give it up after the novelty wears off and they realize the kicks were not worth the risks and the side-effects.

However, a sizable minority who try pot are discontented with what they experience. They expect ever-increasing pleasurable effects, but because of discontent, they will turn to other drugs, particularly LSD.



Under the influence of LSD, a person may sit in a trance. The mind will "see" bizarre effects. Many users have ended up in the psychiatric wards of hospitals because of "bad trips."

While there is no evidence that marijuana causes lasting physical or mental changes, recent studies show that hashish, a concentrated form of marijuana prevalent in Africa and the Middle East, may do so. Hashish is becoming more and more available in Florida. If a teenager is handed a reefer, he can't be sure that it's just marijuana. It may be hashish or a mixture of LSD or even heroin.

Proponents of marijuana claim that the drug is less harmful than alcohol and it should be legalized. They overlook, or choose to ignore, some important differences. Most persons do not take alcohol to the point of intoxication. One or two drinks normally have little effect. One or two reefers can produce marijuana intoxication. When alcohol is abused it still is compatible with some considerable period of productivity. Marijuana quickly interferes with social and economical development.

Alcohol, during the past 2500 years, has become a part of the social structure and a major social problem. It's abuse has ruined countless lives. It is involved in many accidents. It does much harm and yet it is tolerated. But this is no reason to legalize marijuana and permit the indiscriminate use of another intoxicant, which will destroy lives and intensify public health and social problems.

### **Volatile Chemicals—The Sniffers**

Use of various solvents is frequently encountered in self-abuse situations similar to that found in drug abuse. Glue, gasoline, paint thinner, lighter fluids, and hair sprays will produce some form of intoxication. Inhalation is usually practiced by youngsters 10 to 15 years of age and there have been some tragic circumstances.

A teenage boy who had sniffed three tubes of glue, bashed in the heads of his younger brother, mother and father while they slept. A young girl was found to have a habit of sniffing gasoline whenever she was depressed and she had developed a psychological dependence upon gasoline fumes. Both cases were the result of unhappy homes and the children sought these ways to escape from unhappiness and deprivation.

In some states it is illegal to sell glue with solvents to minors. Plans are underway to remove the intoxicating solvents from glue but the control of volatile chemicals in many substances must focus upon the potential user and not on the product. Because the glue is



squeezed into a bag or handkerchief and placed over the nose and mouth, the chief dangers are from death by suffocation, development of psychotic behavior and the state of intoxication.

### **The Drug Abuser**

While much is known of the effects of many drugs which have abuse potentials, the abuser himself remains a mystery to public health and law enforcement agencies and society. Slum conditions, easy access to drugs, peddlers and organized crime are frequently blamed for the problem. Frequently the user of "hard" narcotics is found in the lower socioeconomic groups of metropolitan areas where drugs are the cause of much of the crime activity. The addict's life revolves almost entirely around drug experiences and securing his supplies. He exhibits strong psychological dependence on drugs and feels that he cannot function without drug support.

Many of the marijuana and LSD users are in the academic or intellectual groups. These drugs are used for kicks or just the experience. Pot parties are sometimes the highlights of activities at country clubs. Drug sprees constitute a defiance of conventions or the law, an adventure, daring experience, or means of "having fun." Unlike the hard-core addict who often pursues his habit alone or in pairs, the marijuana and LSD users usually take the drugs in groups or social situations.

The third group of drug abusers is the situational user. The student who takes amphetamines to keep awake at examination time, the housewife who uses anti-obesity pills for additional energy to get through her household chores, the salesman who takes amphetamines to keep awake so he can drive all night to an early morning appointment.

A female narcotic addict who is pregnant can poison her unborn child. Shortly after birth, the baby can suffer all of the tortures of withdrawal. A large portion of infants born to female addicts are premature, develop the narcotic withdrawal syndrome, or die at the time of birth. Because these infants do not have a physical reservoir of strength, their suffering is greater than that felt by an adult who is forced to undergo "cold turkey" withdrawal treatment.

One of the chief problems in Florida, and the concern of social and public health workers and law enforcement officers, is the number of school children who start sniffing glue, move on to chemicals,



paint thinners, hair sprays and other intoxicating chemicals, then on to amphetamines and barbiturates, and finally "graduate" to heroin.

There are several reasons why youngsters turn to drugs. They frequently are suffering from certain types of emotional instability which may not have been exhibited prior to their initial abuse experience.

Some youngsters blame the generation gap. Others believe they are not trusted. Some children are undersupervised and others are over-protected.

Some children experience difficulty with their parents, feel persecuted and overdisciplined and defiant toward society.

Others are torn between fear of the drug and the desire to fit into the group. They take the drug on a dare—afraid of being called a "square" or "Junior Nark"—a term addicts have for narcotic agents.

While the children feel they are mature, they are not yet grown up enough to handle their own problems, especially the

problem of coping with the wrong crowd. Drug abusers become "hardcore" addicts when they get over the fear of the needle. They start shooting "speed" and go on to the other hard drugs. Addicts are a strange group of people. They are suspicious of non-drug users and do not want "squares" around.

### **The Habit is First**

Law enforcement authorities report that heroin addicts steal over \$1 billion worth of goods in the United States each year to support their expensive habit. Usually these goods are sold to a fence at about one-fifth of their actual value. Most addicts turn to stealing, prostitution and other crimes and soon they have long records of arrests and convictions.

Drug abusers are sensitive to every effort to support their habit—the most dominant thing in their lives. To support these habits, the criminal element in the United States has set up a chain of communication and supply. At the top of the pyramid is the importer who ships in the heroin from abroad. Then there are several levels of drop men, salesmen, dealers and street pushers. The heroin may be adulterated several times by the addition of milk sugar, mannite (a product of the ash tree commonly used as a mild laxative) and quinine. The rate of money return runs from 300 per cent for the importer to about 50 per cent for the street peddler. Law enforcement authorities agree that the Mafia, and other groups of organized criminals, operate at the top of the pyramid.

Law enforcement officials say hippies are frequent users of drugs and other substances. These non-conformists frequent city parks (opposite page) and often find themselves in violation of society's laws and principles.



Such criminals do not often risk chances of arrest by handling the drugs themselves but skim off the top of the profits from all illicit activities.

Some addicts, on orders from pushers, persuade other individuals to dabble or take drugs on an irregular basis. Beginners inhale narcotics, such as heroin in powder form. For maximal effects, the narcotics may be injected directly into a vein, usually on the inner surface of the arm at the elbow. After repeated injections, scar tissue (tracks) develop along the course of the vein. Women sometimes use makeup to cover the marks. Men get tattoos at injection sites.

Since anyone injecting narcotics must keep his "outfit" (equipment) handy, it may be found on his person, or hidden in a locker, washroom or a temporary hiding place. The characteristic instruments and accessories include a bent spoon or bottle cap, small ball of cotton, syringe or eyedropper and a hypodermic needle. The spoon is to hold the heroin in a little water for heating over a match or lighter; the cotton acts as a filter as the narcotic is drawn through the needle into the syringe or eyedropper.

Marijuana smokers may be identified by their possession of such cigarettes—reefers, sticks or joints. Smaller than an ordinary cigarette, a marijuana reefer is often rolled in a double thickness of brownish or off-white cigarette paper. Another clue to the presence of reefers is the way in which they are smoked. Such activity occurs in a group situation. Because of the rapid burning and harshness of the marijuana weed, it is generally passed rapidly, after one or two puffs to another person. The odor is that of burnt rope.

Hallucinogenic drugs are usually taken orally, usually in a beverage or on sugar cubes, crackers, small pieces of paper, or wads of cloth. A dot on a piece of paper may be enough LSD for a trip. A supplier of LSD may have a whole card full of dots which he tears off and sells to his customers. Persons under the influence of hallucinogens usually sit or recline quietly in a dream or trance-like state. A feeling of being alone and cut off from the world may lead to anxiety, fear and panic. A LSD session is frequently monitored

by an abstaining LSD experienced friend (guide) to prevent flight, suicidal attempts, dangerous reaction to panic, and impulsive behavior, such as disrobing.

### Identifying a Drug Abuser

Many parents call police, physicians, medical clinics and health agencies asking, "How can I tell if my child is using drugs?"

One girl thought her English teacher was stupid because she didn't notice two boys in class sniffing glue right in front of her. Teachers need to know if their students are abusing drugs. Some students may be using drugs under physician's instructions but without their teacher's knowledge. Such disorders as epilepsy, diabetes or asthma may require drug therapy that will produce low-level side effects. Or a student may be drowsy from ingesting a nonprescription product—such as an antihistamine. Whenever a child appears unwell or disturbed, the parents and teacher should be concerned.

Some of the common symptoms of drugs which parents and teachers can note are:

- \* change in attention, school work attitudes;
- \* unusual flare-ups or outbreaks of temper;
- \* poor physical appearance;
- \* furtive behavior regarding drugs and possessions;
- \* wearing sunglasses at inappropriate times to hide dilated or constricted pupils;
- \* wearing long-sleeved shirt constantly to hide needle marks;
- \* associating with known drug abusers;
- \* borrowing money from fellow students or friends to purchase drugs;
- \* stealing small items and money from school and home;
- \* finding the youngster in odd places, such as closets and storage rooms to take drugs; and
- \* staying out long hours and coming home with strange odors on his person.

Most drugs have certain characteristics:

The glue sniffer has excessive nasal secretions, watering of eyes, poor muscular control, drowsiness, odor of substance on breath and clothes.





The availability of illegal drugs and narcotics in Florida schools is of much concern to public health and law enforcement officials. Many students use drugs as means of rebelling against parents and society.

The person who uses barbiturates has symptoms of alcohol intoxication without the odor of alcohol on his breath, staggers or stumbles, may fall asleep, lacks interests in activities around him, appears drowsy and disoriented.

The stimulant abuser is excessively active, irritable, argumentative, nervous, and has difficulty in sitting still. His pupils dilate; his mouth and nose are dry, causing him to lick his lips and rub his nose. He chain smokes and goes long periods without eating or sleeping.

The heroin user may have traces of white powder around the nostrils if he inhales the drug, scars on his arms and elbows from "mainlining" the drug and wear long sleeves most of the time to hide scars. He is lethargic, drowsy, and the pupils of his eyes are constricted and fail to respond to light.

The marijuana user may appear animated in the early stages with hysterical bursts of laughter and rapid, loud talking. In the latter stages he is sleepy and stuporous. Depth perception is distorted, making driving dangerous.

The hallucinogen abuser will sit or recline in a dream or trance-like state. He may become fearful and experience a degree of terror which makes him attempt to escape from the group. The drug affects the central nervous system and produces changes in mood and behavior.

Individuals who use hard narcotics and LSD are unlikely to be in school classrooms. Medicine bottles in wastebaskets around the house and on school grounds may indicate that the youngster is drinking medicine with paregoric or cough medicine with codeine.

### **Legal Aspects of Drug Abuse**

The normal flow of legitimate drugs is from the manufacturer to wholesaler to community hospital or pharmacy to patient. Many manufacturers sell drugs directly to pharmacies without going through the wholesaler. All companies and wholesalers who deal in drugs must register with the federal government and keep records of all controlled drugs. Pharmacists, hospitals and physicians who regularly dispense and charge for controlled drugs must keep records of all transactions.

Despite efforts of manufacturers and pharmacists to maintain strict control, drug products do slip into illicit channels. Some inferior drug products are made by unscrupulous individuals in garages, basements and abandoned warehouses specifically for underground "buyers." "Front organizations"—individuals posing as legitimate distributors—also obtain controlled drugs for illicit buyers. Whenever possible drug manufacturers carefully investigate distributors to make sure they are of impeccable reputation.

The most important hard narcotic—heroin—is smuggled into the United States and Canada from Europe and South America. The drug cannot be used legally in this country. It comes from opium made from poppies grown in Turkey, Afghanistan, Mexico and Southeast Asia. Opium grown in Turkey is smuggled through Lebanon to France or Syria where the raw product is refined into heroin for distribution throughout the world. Much of the heroin smuggled into Florida comes from the Caribbean Islands and is diverted to northern cities.

People use devious means to smuggle drugs into the country. Customs officials are constantly on the lookout for narcotics but once it is in the United States, the problem becomes the concern of the Federal Bureau of Narcotics and Dangerous Drugs. During the first few months of 1969, over 42,000 pounds of marijuana, 169 pounds of hashish, and 146 pounds of heroin were discovered in transit by federal officials.

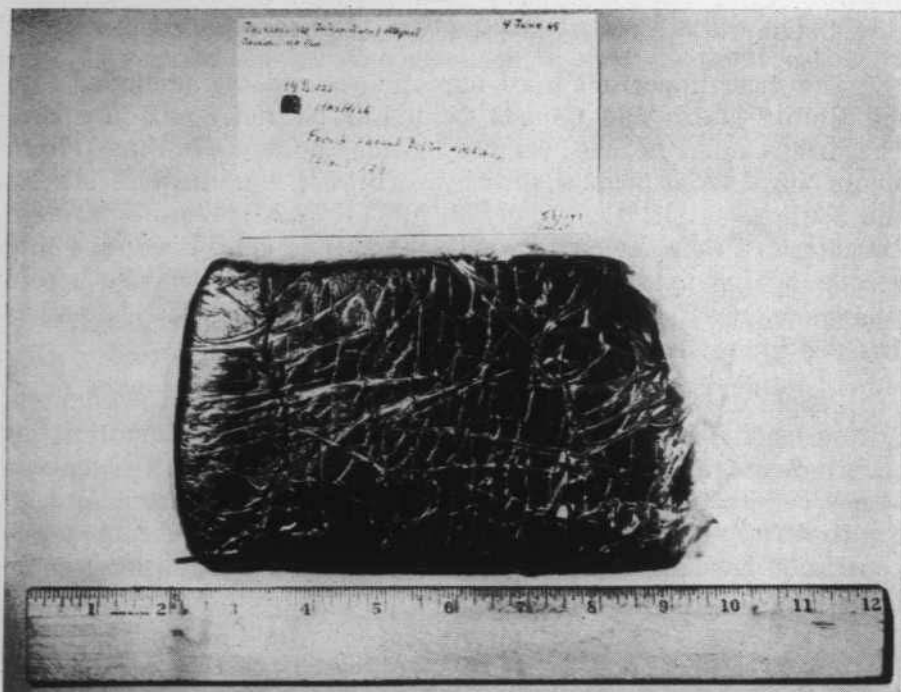
The "bulk" peddlers in amphetamines and barbiturates can enter the chain of drug distribution at any point, either obtaining his product by fraud or buying from unscrupulous distributors, illicit manufacturers or smugglers. He deals in hundreds of thousands of capsules, tablets, selling them to bars, truck stops, "diet mills," newstands and restaurants.

A drug abuser may steal physician's prescription pad, forge a prescription or alter a legitimate prescription—usually by writing in greater quantities of tablets or capsules. Some abusers will go from one physician to another securing drugs for a "complaint."

The United States and Florida both have strict laws regarding the misuse of drugs and narcotics. Each case is handled individually but in Florida a person may receive up to two years in prison on the first offense for possessing or misusing amphetamines, barbiturates or LSD. He may receive up to five years on the first offense for possessing or misusing hard narcotics or marijuana. For selling hard narcotics to a person under 21 years of age, a "pusher" can receive from 10 years to life in prison.

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This package of hashish was confiscated at a Florida airport. It was brought into the state by a teenager who made regular trips to California to purchase marijuana, LSD and other drugs.



Many young people who try drugs forget that they are breaking the law by picking up a marijuana cigarette or they think that it is the "in" thing to do. They are not thinking about their future. The possession and use of narcotics and dangerous drugs is a felony and if convicted, a person can lose his civic rights, including his voting privileges. Such privileges can only be restored by the courts. He may also find it difficult to obtain a job once he is out of prison.

Federal, state and local law enforcement authorities work together in enforcing the drug abuse laws. State and federal agencies conduct workshops and training courses for local police who are becoming more involved in enforcing the national and state narcotic abuse laws.

The Florida Department of Law Enforcement concentrates on the sellers of narcotics and is usually involved in cases when they cross county lines. In a recent case, the Department received word of drug activity in Sarasota County. An undercover agent was sent to the area, worked his way into the group, and made a number of purchases. Investigators unearthed the fact that the supplier was coming from Dade County, and subsequently, a number of arrests were made simultaneously in both counties.

Metropolitan areas of Florida present the major portion of drug and substance abuse but complaints from small cities and rural areas are being received by the Department of Law Enforcement. Federal authorities say that the drug pattern is changing in Miami to more heroin and cocaine. Some nationalities are big users and dealers in cocaine and bring in a great deal of the drug from outside the United States. Law enforcement authorities say that the universities are centers of drug abuse and distribution.

Members of the Jacksonville police vice squad keep tabs on groups of local and visiting hippies. Whenever there is a "be-in" the police visit the scene, obtain names of those present, and frequently turn up Armed Forces deserters or men who are AWOL. Although police say hippies treat them with cool respect, they do not like the constant supervision. Police in this one city say they have over 1200 names on their list of drug abusers.



The 1967 Legislature moved narcotics work from the Division of Health (formerly State Board of Health) to the Department of Law Enforcement. During the transition period, chemists of the Division continue to analyze narcotics for court cases. Every such case calls for laboratory confirmation that the material taken during arrests is truly narcotics, and requires the expert testimony of chemists. Because of the large number of arrests involving narcotics and the subsequent backlog of cases, some municipalities are setting up laboratories to assist in the legal work.

### **Treatment for the Addict**

Many distraught parents and teachers are concerned about the use of dangerous drugs by their sons, daughters and students. There comes the inevitable question, "Where can I go for help?" There is little help that is readily available.

Parents should take their children to their private physician who may refer them to a mental health clinic, community hospital or some other institution. An abuser of hard narcotics may voluntarily commit himself to prison hospitals at Raiford (for men) or Lowell (for women). However, space and staffs in these hospitals are limited and treatment consists of little more than "drying out" the hard narcotic user. There is also a federal hospital at Lexington, Kentucky, but facilities are also crowded there.

When an individual voluntarily admits himself to Lowell or Raiford, he goes through the local police vice squad to the state attorney's office where he makes out an affidavit stating that he is making the commitment of his own, free will. He is then taken to a circuit court judge, who questions him further, and if the judge is convinced that the person is an addict, he commits him to the prison hospital. The key to the voluntary commitment is that the individual believes he cannot control his drug habit or he is a danger to the public safety.

In order to be voluntarily admitted to the federal hospital, the addict must go through similar steps, only through the U. S. Attorney's office and federal courts. The individual must have no state criminal charges against him, must be a true addict and capable of rehabilitation. At Lexington, he is given a 30-day study



Bullet, who belongs to the Jacksonville police department, has been trained to find marijuana in packages, school lockers, or wherever it is hidden.



before being given another hearing and being admitted for treatment.

One of the chief problems facing the addict following his "withdrawal" from drugs is that he usually goes back into the same environment and to the same people who started him on narcotics. Therefore "cures" are estimated to run as low as one per cent to a high of only 25 per cent. In most cases, the addict is in need of someone to help him "kick" the habit. He is not a strong person but a follower and the "friends" to whom he turns are more than likely to give him his first fix (dose of narcotics). Addicts breed more addicts and they cannot tolerate anyone around who does not use drugs.

### **Guidelines for Parents With Teenagers on Drugs**

The students of today are usually hip when it comes to drugs. They frequently are better informed than their parents and teachers on the availability, use and power of dangerous substances.

A member of the Florida state attorney's staff said that when she asked a group of junior high school students how many of

them knew where they could buy marijuana, or knew someone who could get it for them, three-quarters of the class raised their hands.

A physician who is a special assistant to the Attorney General of Florida has worked out the following guidelines for parents who suspect that their child is on drugs:

\* Confirm personal suspicions. Don't jump to conclusions, but seek a personal talk session with your child. Face the issue with

### ***Facts About Marijuana Smokers***

We recommend that parents familiarize themselves with the facts on marijuana so that they may be better able to discuss this problem with their children. Most youthful marijuana smokers:

- \* use the drug in groups (pot parties);
- \* try to turn on straight kids;
- \* try to "fool the straight world";
- \* tend to downgrade the dangers of the drug and degrade school and law enforcement authorities who interfere with their activities;
- \* recognize the "Do Your Own Thing" and think twice about squealing;
- \* fail to realize that every pusher has other drugs and will push them;
- \* use "pro-marijuana smoking" articles in newspapers and magazines to justify their own habit;
- \* use the hypocrisies of the straight world to justify smoking marijuana;
- \* are not aware of the legal consequences when they violate the law;
- \* ridicule the loss of motivation for their future lives and the psychic addiction which results from smoking the drug; and stress the absence of physical addiction;
- \* fail to realize the most insidious effect of all: the habit of "tuning out" on reality when confronted with an unpleasant life situation.



A member of the Jacksonville police vice squad examines a "nursery" of young marijuana plants. The plants were discovered by mosquito control inspectors during routine inspection.

concern and love—not in haste or dominance. Don't seek to find out from others information to confirm your suspicions.

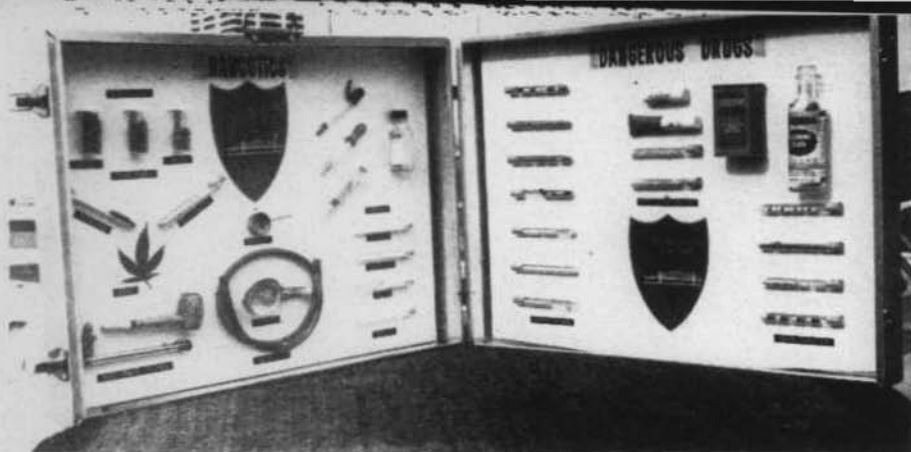
- \* Ask the question, WHY? Be willing to hear both sides of the issue with concern and love. You may hear things about yourself that will upset you.

- \* Take a realistic view. In personal confrontations with the youth, be willing to approach all aspects and reasons for drug abuse. Hear the whole story without losing your cool.

- \* Don't panic. Seek professional help and counseling for your child. There may be some resources in your community for helping youthful drug abusers. Getting upset over the situation may be playing into your child's hands. Show concern rather than fury.

- \* After seeking and obtaining help for your child, do all you can to keep harmony in the house. Drastic steps may be necessary if the teenager refuses help and there are younger children in the home.

- \* Don't get "conned" into thinking everything is all right. Know the signs of drug abuse and make sure your child is trying to stay



Law enforcement officers frequently talk to schoolchildren about the dangers of drugs and substances which are frequently abused. This display kit used by one police department helps identify the dangerous drugs and narcotics.

clean. In many cases the road back is hard, so be patient—but expect results. Don't go around saying, "Why did this have to happen to me?" Your son or daughter needs you now as never before.

\* Start a building program. Slowly try to build in the youth a purpose for life, reasons for living and personal achievement. An active teenager is less interested in using drugs.

### Drug Abuse in Paradise

Florida is the land of sunshine, beaches and opportunity. For many of the six million citizens and 20 million annual visitors, it is a beautiful place to work and play.

But the ugly, frightening world of drug and substance abuse is present in all of this sunshine. Our schoolchildren know it. Many residents and tourists who look for drugs find them readily available. Some people are on drugs or substances and do not know it. All they know is that they need a pill to "pick" themselves up, or to go to bed at night. The problem is present because of our affluent society, available money, and young people and individuals "looking for a good time."

The answers to the drug problem lies in education and enforcement. It will be better to have a generation of people informed on the dangers of drugs rather than a generation with prison records.

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# Division of Health of the Florida Department of Health and Rehabilitative Services

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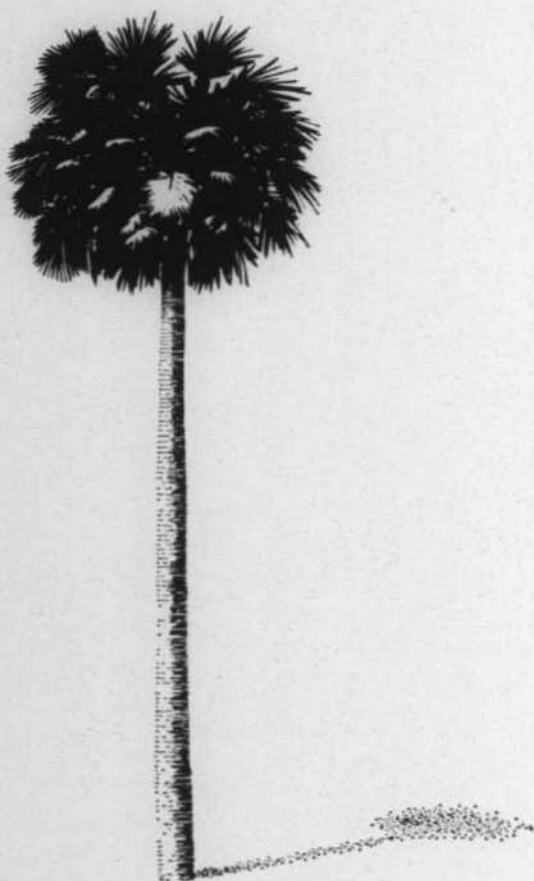
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Division of Health  
of the  
Florida Department of Health  
and Rehabilitation Services

Post Office Box 210 Jacksonville, Florida 32201

# FLORIDA HEALTH NOTES



VOLUME 61 — NO. 11

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## INFLUENZA

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# INFLUENZA



You have a scratchy throat, a headache and muscular pains. You have congestion of the nose and sinuses, chills followed by fever; and you feel weak. Your eyes ache and water; you are hoarse. Just like everyone around you, you say, "I'm coming down with a cold!"

You may be right. You may have an ordinary respiratory infection, or you may be one of a large number of people who are caught in an influenza epidemic. As the days grow shorter, and the cooler season approaches, you may go to your physician and ask, "Is it going to be a year for the flu? Hadn't I better get a shot?"

There are a number of respiratory diseases—some mild, some acute—which have many of the same symptoms. One of these diseases—influenza—is thought of by some public health and medical people as the most important viral disease in the United States because of its frequency of illness and the serious nature of complications. Other respiratory infections are common, but do not cause as many deaths.

Influenza is sometimes called the last uncontrolled great plague of mankind. Epidemics of unpredictable size and severity recur too frequently and too regularly. During an epidemic there are excessive deaths of young infants and older folks associated with influenza.

While influenza is often thought of as a "mild" disease because it lasts from one to five days, it frequently leaves the patient exhausted or weakened as if he had gone through a long illness. Public health officials say vaccines are available and recommend these especially for certain groups of the population. But these vaccines frequently are outdated by new strains of the influenza viruses.

This issue of **Florida Health Notes** will tell you about influenza, why it is a public health problem and difficult to control, and about the vaccines which have been produced to combat the disease. The Division of Health is interested in whether you see your physician when you have a case of influenza, and what you do to protect yourself. We'll also suggest ways to take care of yourself if you contract "La Grippe."

## INFLUENZA -- WHAT IS IT?

Influenza is a fancy name bestowed on a common, viral respiratory disease by astrologers of the Middle Ages. They attributed outbreaks of the disease to unfavorable aspects of the planets and stars and thus the Italian word for influence—Influenza. True influenza is caused by a virus. Its identity can only be established by laboratory means.

The disease occurs in cycles or waves. The presence of an epidemic wave of influenza-like illness is certain evidence that the virus is in circulation. It can only be pinned down precisely by laboratory tests.

There have been only a few world-wide epidemics thus far in the 20th Century:

\*The disastrous epidemic of 1918-19 following World War I when there were some 20 million cases and 500,000 deaths in the United States alone; this epidemic left a heritage of fear about influenza epidemics.

\*The second was the notorious 1957-58 epidemic of Asian influenza which was caused by a variant strain of virus. There were some 60,000 more deaths than would have been reported had there been no influenza epidemic.

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### FLORIDA HEALTH NOTES

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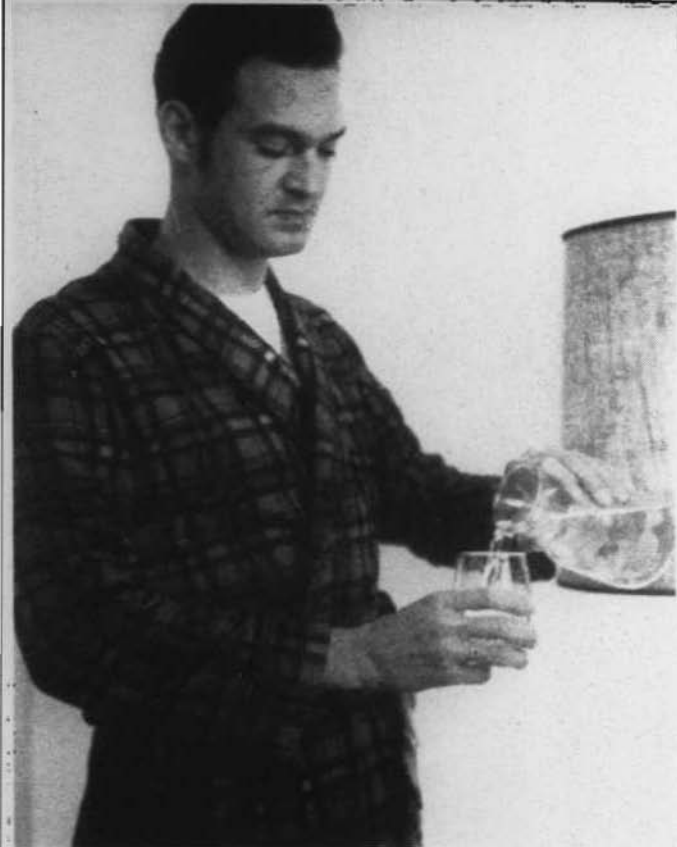
Physicians recommend bed rest for those who have influenza. The patient should be isolated, or restricted, from contact with elderly persons or those with respiratory diseases.

\*The latest was the Hong Kong influenza epidemic of October 1968 to March 1969 when the disease swept around the world in a few months.

Sporadic cases do occur from time to time, but they look much like other respiratory diseases of short duration. These cases have little impact on communities, cause few complications, and there is seldom reason to seek definite laboratory diagnosis on an individual basis.

#### THE VIRUSES -- CHANGING VILLAINS

There are two major types of influenza viruses-A and B. Type A was first identified in England in 1933; Type B in the United States in 1940. Both types have subtypes, or strains, each different from the other. From time to time, new strains develop and replace



Doctors often prescribe light, but tasty, diets and plenty of liquids for persons with influenza.

the older ones. When a new strain appears, it may be greeted with little notice or much fanfare. Or it may set off an influenza pandemic (wide spread epidemic).

The changes which appear in Type B viruses come slowly and do not seem to suddenly make the vaccines used against them ineffective. In 1955 there was a more drastic change in Type B which made it necessary to update the vaccine used to combat the virus.

There are also two minor types of influenza, C and D, which have been implicated only in sporadic outbreaks.

Type A seems to be the most virulent of the viruses. When Type A-1 slipped into the picture in 1947, it nudged out the older strain of Type A. However, mankind was fortunate that the change did not set off an epidemic or take place during World War II.

Another change took place in Type A-1 when the first outbreak of Asian influenza (Type A-2), was reported in Hong Kong and Singapore in early April 1957. In a year's time, it spread around the

world. Its progress was traced and carefully documented. When this major shift in the molecular structure of Type A virus produced the A-2 strain, old A and A-1 strains disappeared, and all recent virus isolations by laboratories were the A-2 type.

Like other influenza strains, A-2 began to make alterations in its structure, some great enough to require changes in vaccine components. In July 1968, a new strain of A-2 appeared—again in Hong Kong—and it produced epidemics there and in other parts of the South Pacific. Because it was different enough from older Asian influenza strains, epidemiologists, through experience, could forecast its global spread.

Influenza viruses fascinate epidemiologists and frustrate those who would control them. One outbreak, or epidemic, looks very much like another. The symptoms are the same. But the viruses that produce these epidemics are so much in a state of change that they ensure their continued existence despite man's efforts to destroy or neutralize them.

## IDENTIFYING THE INFLUENZA ILLNESS

Since the Middle Ages, the experiences and points of view of observers of influenza have colored descriptions and interpretations of the disease.

In the 16th Century, Queen Elizabeth's ambassador to the Scottish court wrote that a new disease was "sweeping the court and common in the town." He said it caused a plague in the head, a soreness in the stomach, a great cough that remained a long time with some, and shorter time with others. He added there was no appearance of danger or many that died—only among the older folks.

Thomas Carlyle in the 19th Century wrote that "All the people have got a thing they call Influenza, a dirty, feverish kind of cold, very miserable and so general as hardly ever seen. Printing offices,

manufactories, tailor shops and such are struck silent, every second man lying sniffling in his respective place of abode."

Medical practitioners were impressed by the uniformity of clinical syndromes. An Englishman wrote that the fever seemed to be exactly the same with that which in the spring was wide spread all over Europe. Though exceedingly common, the fever was fatal to few.

### MODE OF SPREAD

Influenza usually begins as a small centralized outbreak with airborne transmission of viruses. Viruses are transmitted by drop-let spray from the respiratory tracts of infected persons or by direct contact with objects contaminated by discharge from the nose and throat of infected individuals.

Ordinarily outbreaks occur during the "flu" season—from early autumn to late spring. An epidemic may affect 20 to 40 per cent of the population and may reach its peak in an area in about three weeks and subside completely in another few weeks.

### CLINICAL ILLNESS

Influenza has an incubation period of 18 to 36 hours. It is manifested abruptly by fever, chilliness and aching in the back and extremities. Weakness and fatigue follow, which may proceed rapidly to prostration. Soreness and watering of the eyes may occur. The throat is painful, and there may be a nasal discharge. By the second day, the temperature may reach a sustained level of 101 to 104 degrees Fahrenheit.

By the third or fourth day, the fever falls rapidly and symptoms disappear though the cough and fatigue may continue. Persistence of symptoms and fever into the fourth and fifth days may suggest pulmonary complications.

### LABORATORY DIAGNOSIS

When large numbers of people fall ill at the right time of year, in rapid succession with an acute illness which lasts for three or four days, public health workers are suspicious of the presence of an influenza virus.



Laboratory procedures are essential for the identification of influenza viruses. Specimens from infected persons are logged into the Division of Health laboratory (above). A microbiologist (left) dilutes serum for influenza tests.

There are other viruses and some bacteria which cause influenza-like symptoms—fever, chills, headache, sore throat, cough and assorted aches and pains—in any and all combinations. True in-





Laboratory tests are placed in an incubator (top left). A microbiologist prepares solutions for influenza tests (bottom left). The Division of Health maintains an animal colony, primarily of mice, for research in infectious diseases (below).



fluenza is caused by the influenza viruses whose identities can be determined only by laboratory means.

The diagnosis for influenza is a complicated procedure. Two methods are available:

\*isolation and identification of the virus directly from an infected individual by inoculating the washings from the throat and



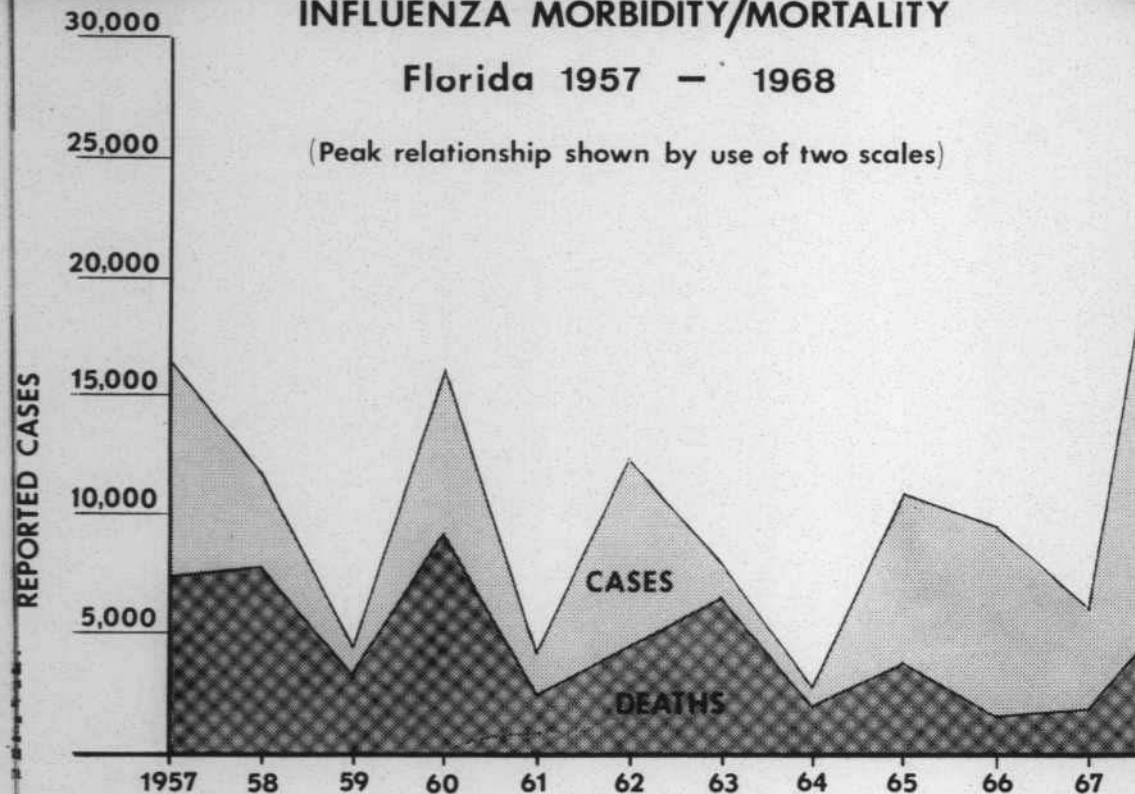
In order to keep infectious material from spreading, and to protect themselves, microbiologists handle influenza viruses under hoods (top and bottom left). Healthy animals, such as this rooster, are vital for laboratory identification of influenza viruses.

nasal passage of the ill person into appropriate host systems, such as embryonated eggs and tissue culture. After proper incubation, the influenza virus has the ability to kill the embryonated egg or destroy the tissue culture. This destructive process is called cyto-

# INFLUENZA MORBIDITY/MORTALITY

Florida 1957 — 1968

(Peak relationship shown by use of two scales)



Influenza epidemics occur every few years in Florida. Over 37,000 cases were reported in the most recent epidemic in the state which occurred between November 1968 and late March 1969.

pathologic effect (CPE). The trained virologist of the Division of Health is now able to identify the influenza as to type and strain. To further demonstrate the overall extent of the virus invasion into the population, a serological test is employed to give rapid identification.

\*serological demonstration of a four-fold rise in antibody titer. This is the identification of substances in the body which show that the body has put up a defense against the influenza virus. In determining antibodies, a blood specimen is collected from the infected individual during the acute stage of the illness and again 10 to 14 days later. By appropriate treatment of the blood serums to remove interfering components, reaction of the specific antibody with its own virus can be demonstrated.

The routine laboratory studies (urinalysis, blood count) are not in themselves diagnostic. They are helpful in ruling out other causes of the illness.

## THE EPIDEMIC

Local epidemics are explosive but of relatively short duration. When the disease strikes, it spreads rapidly through a community, affecting as much as one-fourth of the population. It tapers off and is gone within a few weeks, an individual may contract an illness with similar symptoms at other times of the year and may call it "summer flu" or some other pet name.

The first indication that the virus is rampant may be a sudden upsurge of absences in schoolrooms and of visits to doctors and clinics. Even when advance warnings of an impending influenza epidemic has been issued by the Division of Health and the U. S. Public Health Service, the first wave of absences may be attributed to "some bug or virus that is making the rounds." Conversely, when an epidemic is in full swing, many other illnesses are attributed to "the flu."

Individual cases of influenza do not stand out immediately as distinct from other viral respiratory diseases and are very difficult to diagnosis. Epidemics are the hallmark of influenza and they may be easier to identify in out-of-the-way places, such as small towns or institutions, than in large metropolitan areas.

Because the disease is generally mild and self-limiting, and despite all of its unpleasant aspects, many people do not see a physician. A week or two may pass before diagnostic specimens begin to flow into the virology laboratories of the Division of Health, and the outbreak may be half-over before it is labeled and typed as "influenza."

Schools are often called places where "kids swap germs." Like many institutions, they make the exchange of respiratory viruses very easy. Schoolchildren are highly susceptible to influenza be-

cause they have not had enough experience with various viruses to build up immunities. However, most healthy young people recover rapidly and completely from influenza.

This is not true of older persons. Those with chronic diseases, particularly heart or lung, find the burden of viral infection may spell disaster. During major outbreaks, the mortality rates for people over 45 years of age, and especially those 65 years and older, increase beyond what would ordinarily be expected. This is particularly true during Type A outbreaks. However, during the epidemic of 1918-19, many young adults in their mid-20's died as the result of the disease.

When a new influenza virus strain comes along, it may involve the whole world within a matter of months. As previously stated, the disease tends to follow a cycle or wave. Type A cycles in the United States every two to three years. However, eastern and western sections of the country are not always in the same phase. Type B has three to six year cycles, but this is a less important virus and the degree of community involvement and mortality is less than with Type A.

## INFLUENZA IN FLORIDA

Influenza epidemics affect Florida the same as the rest of the United States. In 1918-19, a total of 3161 deaths was attributed to the disease. But as in other epidemics, complications from the disease contributed to higher death rates from heart and lung diseases, especially pneumonia.

Other flu epidemics have hit the state repeatedly since 1918. The most recent was the Hong Kong influenza epidemic of 1968-69. The A-2/Hong Kong/68 influenza virus was first reported to be in epidemic proportions in the United States in late October of 1968. This occurred in the small town of Needles, California. Within weeks, it was diagnosed in Colorado and New Jersey. The disease spread as an epidemic from west to east and by the last week in December, 1968, had involved all 50 states.

The Division of Health's laboratories made serologic diagnoses in late October and early November. The disease reached epidemic proportions by early December, peaked in mid-January, and had



completed its cycle in the state by late February. A total of 37,222 cases was reported between December 1, 1968, and March 21, 1969. The influenza epidemic the previous year affected 20,401 persons for the same time period.

South Florida was the earliest and most severely affected. Central, North and Western portions of the state reached epidemic status slightly later but dropped off sooner, and by mid-January, their situations were resolved.

## SURVEILLANCE

Influenza prediction has been compared with weather forecasting—useful, fairly accurate, and constantly subject to change.

Both influenza and weather reporting rely on past experiences, re-examined and interpreted facts in retrospect, and on exchange of information through national and international observation posts and laboratory networks.

Epidemiologists, people who track down the cause and course of disease outbreaks, have observed influenza closely for many years. By charting and analyzing its known characteristics, such as its cyclical occurrence and the way it affects different people, a pattern emerges. From these factors, the epidemiologists project:

- \*the years when outbreaks of epidemic or near-epidemic proportions are likely to occur;

- \*type of influenza virus likely to predominate;

- \*the groups of people who will have the highest infection rates; and

- \*the kinds of people who will suffer the most severe consequence from the disease and therefore need to be vaccinated.

National and international health agencies, including the World Health Organization and the U. S. Public Health Service's Com-

municable Disease Center, are on the alert to detect the first signs of an outbreak anywhere in the world. They analyze the characteristics of the virus, trace its journey, and evaluate the vaccines developed to combat it.

Information about increased respiratory illness leading to absenteeism comes to the Division of Health from throughout Florida. In turn, the Division feeds the information on to the U. S. Public Health Service.

Because of a prediction of a pending influenza epidemic, the Division of Health established an experimental system of surveillance in early September, 1968. This was to give a fairly accurate state-wide picture of the epidemic.

County Health Departments checked absenteeism in schools, industry, and among their own personnel. Admissions to hospitals for respiratory illnesses were tabulated. Deaths attributed to pneumonia-influenza were noted. Some county health officers conducted weekly telephone surveys of samples of their practicing physicians and, in turn, developed a "feel" for the extent of the disease in their community. The Division of Health contacted the county health units weekly and recorded all data.

Because of the 1967-68 epidemic, the influenza season for 1968-69 was expected to show little Type A activity—at least in the eastern part of the country. The appearance of the Hong Kong strain in July changed the entire outlook for the season. As a result, there were more cases of influenza reported than in any year since the 1918 epidemic.

## MORBIDITY AND MORTALITY

Because of its recurring action, the influenza virus has caused a fluctuation in the number of reported cases and deaths attributed to the disease over the years. Since 1957 the reporting has been more exacting and influenza cases have peaked every three to four years since that time. Deaths from influenza have also followed the cycling trend. In 1968, 29,354 cases of influenza were reported



If you feel sick, you should see your physician and . . .

to the Division of Health. There were 129 cases of deaths from influenza with a death rate of 2.1 per 100,000 persons. The previous year (1967), a total of 6037 influenza cases were reported with 34 deaths and a death rate of 0.6 for 100,000 population.

The epidemiologic description of influenza is "a high number of cases and low number of deaths." But this characterization does not apply to the elderly. The attack rate for elderly people is low because they do not go places, such as schools, where the virus is spread. The rate of influenza attack is higher in those families, however, where there are children, or in nursing homes or other institutions where there are many elderly persons.



... if possible take advantage of the vaccine to protect you from influenza. The Division of Health recommends the vaccine for those who are elderly, have respiratory diseases, or are in an important service occupation.

The abrupt onset and high fever of influenza is often absent in the elderly. The patient may slip into a vague symptom complex and the virus is recognized only after its effects have made inroads on the respiratory tract and cardiovascular system. The complications which are uncommon in many younger people but prevalent among the elderly, give special significance to influenza among the geriatric population.

Pneumonia has been an outstanding complication of influenza infection. It may appear in previously healthy young and middle-age adults, pregnant women, and patients with rheumatic heart disease. Deaths due to pneumonia have continued to climb regardless of influenza recurrences and death rates due to pneumonia do not follow the cycles. Approximately 1500 or more deaths due to pneumonia have been reported annually in Florida since 1962.

Public health workers are very much aware of the 1918 lethal influenza pandemic associated with World War I. Little is known about the virus that caused the epidemic because there was no way to isolate and identify the influenza "bug" that set off the devastating situation. There was no way to preserve specimens against the time when decades later, advanced laboratory procedures were available to crack their sinister secrets.

## PROTECTION AGAINST INFLUENZA

Following the isolation of the influenza viruses, vaccines were developed to combat the disease. Beginning in the early 1940's, when the first inactivated influenza vaccine was introduced, field trials showed that vaccines were able to protect up to 70 per cent of those receiving the vaccine. But in 1947 when Type A-1 slipped onto the scene, the vaccines which were already prepared were ineffective.

Emergence of a new influenza strain anywhere in the world calls for action. Its epidemic potential may be severe and extensive, because people are usually susceptible to new strains and existing vaccines may be totally ineffective. The sooner a new viral strain is isolated, the sooner production of a specific vaccine can be started. But at best, several months will elapse before the new vaccine is generally available. In the meantime, the epidemic may spread over a large area.

Reasons for the lag in vaccine production are many. The production is exacting and time consuming. Fertile eggs at certain stage of development are required to cultivate the virus. Some influenza viruses are particularly difficult to grow and develop so slowly that the harvest often is small. Any vaccine must be tested for potency and safety before it can be produced in quantity and licensed for use. Even the slightest change in the structure of the virus strain may make one year's vaccine slightly less effective against the next year's virus. Immunity gained by people through exposure or infection to the previous year's virus may give little protection. A person may have influenza as many times as a new virus strain appears.

Some studies indicate that Type A vaccine may give 70 per cent protection one year and considerably less the following year. Type B vaccines are somewhat more consistently effective, but Type B epidemics tend to be less severe than Type A, affecting mostly children and therefore a small threat to the high-risk groups—the elderly and chronically ill.

People who are allergic to eggs and egg products may have a reaction to the vaccines. The virus itself which is used in the vaccine has been killed, but the body's response to the foreign proteins



in the vaccine may simulate flu-like symptoms, particularly fever. Reaction tends to be most severe in children—the very group most susceptible to the highly mobile influenza virus, and the group subject to the greatest exposure.

Vaccines developed against such viruses as smallpox, yellow fever and poliomyelitis are quite effective because these viruses have changed little or not at all over the years. The use of vaccines against such frequently-seen viruses as the common cold and influenza has not been completely satisfactory. The viruses responsible for colds occur in at least 80 different strains—all of them dissimilar in molecular structure. Protection against several viruses in one vaccine is enormously difficult—if not impossible.

New techniques developed by medical research have made a new purified influenza vaccine available. Because the culture media (chicken embryo) has been removed through purification process, the vaccine will give greater immunity and less reaction. Persons allergic to chicken products may now be able to receive the vaccine. Because of the new techniques, the vaccine will necessarily be more expensive than the older kinds but two drug companies are in full production and it is now available from many Florida physicians.

#### WHO SHOULD BE PROTECTED

No one wishes to go through the prostrating seige of illness typically produced by influenza, but the impact of the disease is particularly severe on high-risk segments of the population. During the past epidemics, the blight fell heaviest on persons 45 years and older, notably those over 65.

Excessive deaths occurred among persons suffering from cardiovascular-renal (heart disease) disorders and other chronic diseases, such as asthma, diabetes mellitus, pulmonary tuberculosis, cirrhosis of the liver and metabolic disorders. Patients residing in nursing homes, chronic disease hospitals and comparable surroundings should be considered as particular risk groups since their living arrangements may allow greater spread of disease once an outbreak has been established.

There has been some increase in the mortality among pregnant women during influenza epidemics—both in the United States and



Some nonprescription drugs available for influenza may have side effects, such as dizziness or drowsiness. It is a good policy not to drive after taking such medicines.

abroad. However, routine influenza immunizations during pregnancy are not recommended unless the individuals also have one or more of the high-risk diseases mentioned above.

Physicians considering general vaccination programs for industrial, schools and other groups should weigh the expense of the program against the likelihood of extensive illness. When widespread epidemics of influenza are forecast, public health officials recommend the use of influenza vaccine for those persons who are engaged in medical and health services, hospitals, public utilities, transportation, education, communications, police and fire department services, and operation of factories and offices. These persons are members of high-responsibility and strategic groups and should be immunized so they can serve the general population effectively.

#### TREATMENT FOR INFLUENZA

Vaccination is the most effective method of reducing the incidence and lessening the severity of epidemics. As mentioned, past experience has indicated that the vaccine is effective in about 70 per cent of those receiving it. Because of the one to three days incubation period of the disease, and the time required for the immuni-

zation to become effective (at least 10 days), the vaccination program should be carried out in advance of the epidemic.

But should you be one of those persons who develops influenza symptoms, there are several things you can do to try and prevent complications. The first thing is to **see your physician and follow his instructions**. Bed rest is essential during the period of fever and one to three days thereafter. The patient should be isolated, if possible, or at least strictly segregated from persons with other respiratory infections and elderly people in the home. A light, soft diet is advisable, but it should be appetizing since maintenance of nutrition during the fever is important. The patient should drink at least two quarts of liquids each day.

### PREDICTION FOR AN EPIDEMIC

As previously mentioned, influenza sweeps through Florida's citizens and residents every few years. An epidemic may be portrayed as:

- \*explosive onset, rapid spread, short duration;
- \*sudden increase of absenteeism in schools, and in visits to doctors' offices and clinics;
- \*many cases, particularly among the young, but very few deaths except in high risk groups; and
- \*world-wide involvement, within a short time, when a new viral strain appears.

The 37,000 cases of influenza reported between October and March last year may appear large when compared with the number of other communicable diseases (whooping cough—98; tetanus—11; measles—534; mumps—2252). But despite this number, there are many susceptible persons among Florida's six million persons who may contract influenza during the coming year.

Because of this fact and circumstances around the supply of vaccine last year—limited and late—the Division of Health's epidemiologists predict the return of the "old" Hong Kong influenza virus during the 1969-70 "flu" season.

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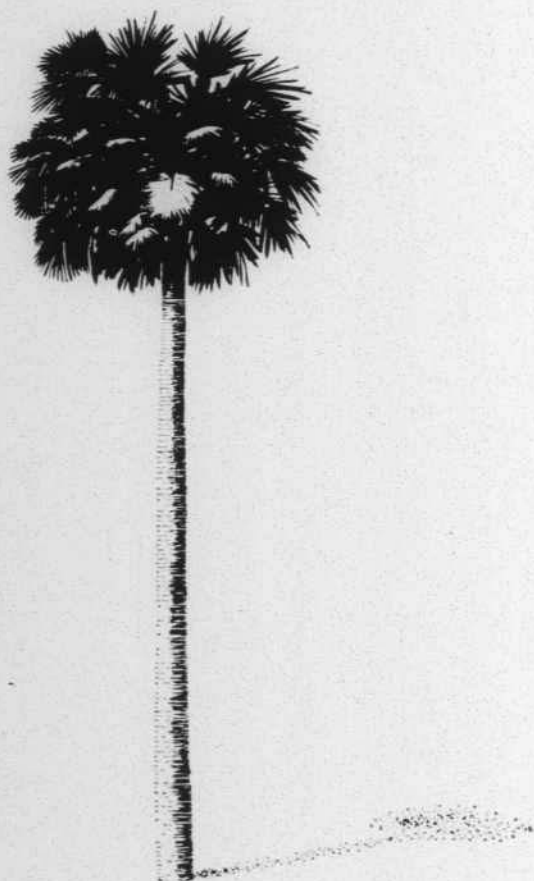
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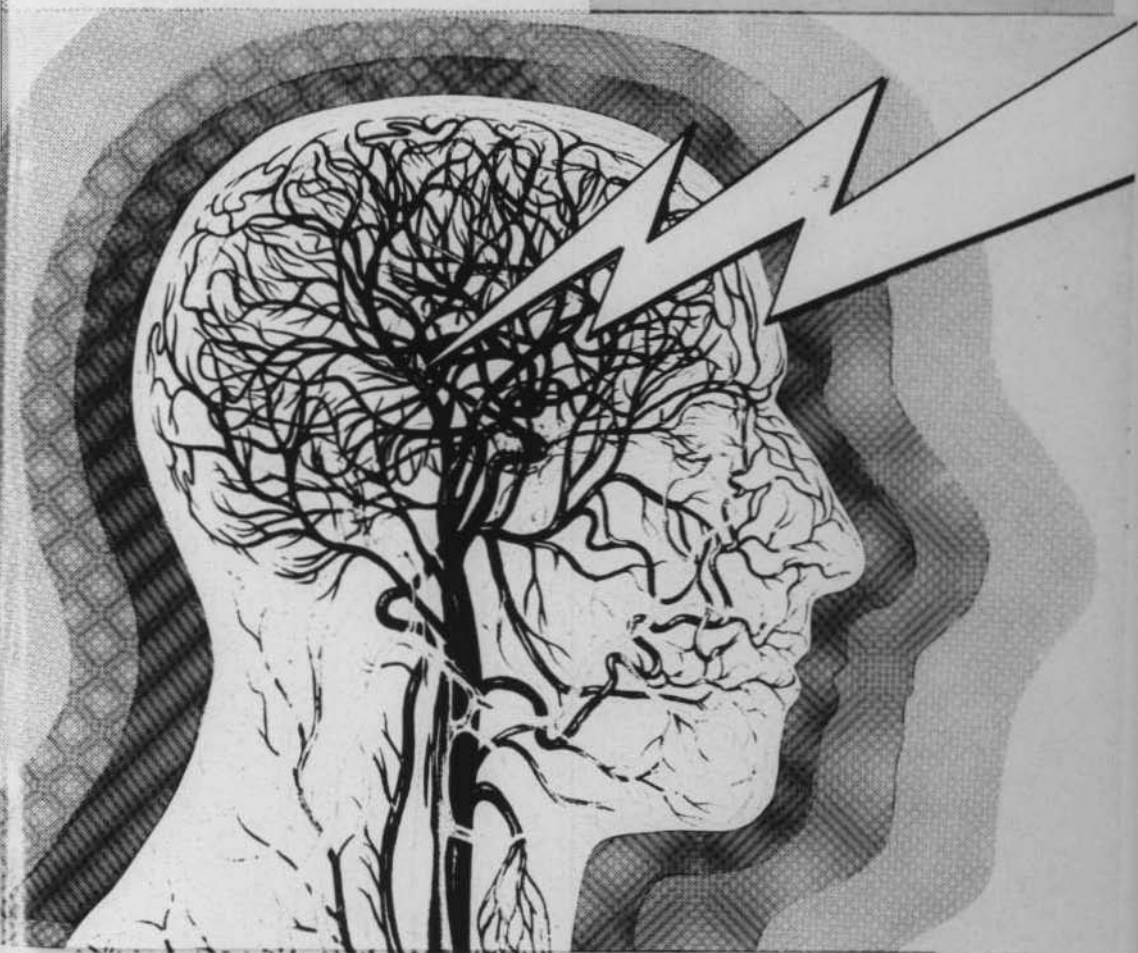


Division of Health  
of the  
Florida Department of Health  
and Rehabilitative Services

Post Office Box 210 Jacksonville, Florida 32201



# FLORIDA HEALTH NOTES



VOLUME 61—NO. 12

DECEMBER 1969

## STROKE

(Cover photo) A common cause of stroke is the loss of blood to an area of the brain. This may occur because of a hemorrhage or blood clot. The stroke may take place suddenly but the conditions leading to it may develop over a number of years.



A special cardiovascular screening program in Charlotte County Health Department uses a computerized electrocardiograph to detect abnormalities. Volunteers in the clinic attach electrodes to a patient under the supervision of a physician (1); a final check is made (2); and a telephone call is placed to the Computer Control Center in Gainesville where the tracings are made and analyzed (3); a copy of the tracing is also made at the clinic and is examined by physicians (4).

# STROKE

*detection—diagnosis—treatment—prevention—rehabilitation*

Mrs. Harrington had a stroke. Her family was concerned whether the 49-year-old woman would survive. Relatives who were nurses spent day and night at her bedside giving nursing care that would lead to an almost complete recovery. But in spite of good care techniques, Mrs. Harrington was left with a speech defect and her right side was affected. Despite her condition, she soon was able to carry on her housework and operated a florist business.

Mrs. Harrington was fortunate that she had a family who could help with her rehabilitation. Many stroke victims spend weeks in hospitals and months in nursing and convalescent homes. However, the nursing care and rehabilitation of many stroke victims have put a very heavy economic burden on many families.

Mrs. Harrington is just one of some two million survivors of stroke in the United States. Public health officials estimate that there are some 60,000 persons in Florida who have lived through a cerebral vascular accident. Many are invalids, unnecessarily dependent on others.

But where are the survivors? What caused their strokes? What can be done for them? Who is caring for them? What facilities are available in Florida to help those who have been the victims of stroke? What is being done to prevent people from having strokes? And what is being done to detect the potential stroke victim?

We hope this issue of **Florida Health Notes** will give some of the answers.

The term "stroke" is applied to the sudden loss of function of a part of the nervous system. It may be very slight, or very severe, depending upon the areas of the brain that are injured.

The results of the stroke may be weakness of a group of muscles, or it may result in complete paralysis of one side of the body. Other manifestations of stroke may be loss of memory, difficulty in talking, and in some cases, personality changes.

Strokes can occur at any age. However, they are most common in elderly persons. Often a severe stroke is preceded by mild and passing attacks of dizziness, headaches, and weakness of an arm or leg.

### *Causes of Strokes*

There are a number of reasons why stroke affects the functioning of a part of the brain.

Rare causes of temporary or sudden stroke-like symptoms may be metabolic diseases, such as multiple sclerosis, porphyria (a blood condition), some form of epilepsy, or sudden changes in blood pressure or other conditions.

By far the most common causes of stroke are those producing a rapid loss of blood supply to the involved area of the brain. These causes are classified as follows:

- Those produced by an embolus (a small clot) which breaks away from a larger clot on the wall of a large artery or from the wall of the heart. This clot is carried in the blood stream to the brain. When it reaches an artery too small to pass, that artery is suddenly occluded (blocked), and the brain tissues supplied by the artery cease to function and die.
- Those produced by a clot forming on a diseased artery wall in the neck or in the brain. This is believed to be the most common cause of stroke.
- Those caused by hemorrhage. The artery ruptures at a weakened point and blood is pumped out into the brain tissue raising the pressure around the artery to such a degree that blood can no longer circulate through the artery beyond the leak.
- Inflammatory disease of the arteries and pressure on the artery from a tumor which interferes with the blood supply to an area of the brain.

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#### FLORIDA HEALTH NOTES

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Public health nurses and community health workers take blood pressure readings of customers in a rural store during a hypertension (high blood pressure) screening program. Many persons with abnormal readings are discovered in such screening programs and asked to visit the County Health Department clinic.

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- Increased tendency to clotting may result in the blocking of a cerebral artery, such as associated with thalassemia or sickle cell disease (a blood condition), and an increase in conditions which lead to clotting in the circulatory system.

The disease "atherosclerosis" is the cause of the greatest number of strokes. This condition is responsible for intra-arterial thrombosis (hardening of the arteries, blood clots and hemorrhage). Atherosclerosis is a condition in which the innermost walls of the arteries undergo fatty degeneration, and differs from "arteriosclerosis" — which is the thickening and hardening of the walls of the arteries — a condition frequently found in the elderly.

### *Atherosclerosis*

This is a disease of the walls of the arteries. With respect to stroke, it is a disease of the four vessels of the neck or the arteries of the brain.



A clerk reminds a patient by telephone that he has an appointment for an examination at the County Health Department.



The name atherosclerosis comes from two words, "atheros" meaning porridge, and "sclerosis" meaning hardening. When early physicians examined the walls of arteries during autopsies, hard areas could be felt as they passed their fingers over the arteries. When the artery walls were sliced open, the physicians could see greyish porridge-like material in the hardened areas.

These areas of atherosclerosis involve the linings of arteries and disturb the flow of blood. There is a tendency to form small clots (thrombii) which are wafted along by the blood stream until the branching artery becomes too small for it to pass. The small blood vessel is blocked, and the tissues supplied by the blood vessel are deprived of the blood supply and become dead tissue.

The thickened areas of the blood vessel may become inflamed or swollen. The inflamed surfaces cause more material to collect in one spot and a clot to develop over the original swollen area. In this way the involved artery gradually becomes narrowed to the point that it can no longer carry enough blood to supply the needs of the tissue.

If this is one of the arteries supplying an area of the brain, the person may have temporary spells of muscle weakness, sensory disturbance, or may even lose consciousness for a few minutes. These attacks may be brought on by a sudden demand for an increased supply of blood, or may be precipitated by constriction of the diseased artery. Normally, constriction of the smooth muscle in the wall of a healthy artery would serve to regulate blood flow. In a diseased artery where the flow of blood is restricted by the presence of a swollen area, slight constriction of the walls may completely block the vessel.

One method of relaxing or dilating the artery walls is to hold one's breath. This allows the accumulation of carbon dioxide and restricts the oxygen to the surrounding tissues, thus serving as a stimulus for the arteries.

Small clots, which later may dissolve, may temporarily block the arteries and stop the flow of blood. When this occurs the victim may have temporary symptoms of visual disturbance, dizziness, weakness, paralysis or unconsciousness. These are called transient ischemic attacks — or slight strokes.

These slight strokes may occur frequently, several times a day, or once or twice a year. They are very important symptoms, as 25 to 35 per cent of the people with such attacks may be expected to have a complete stroke within five years. Some physicians say that 70 per cent of the persons having transient ischemic attacks have devastating strokes within this period of time.

These attacks occur in localized areas of the brain and constitute the most significant pre-stroke symptom. The completed stroke resembles these attacks except for duration and extent. Each case of a slight stroke should be investigated to determine the cause and to allow for appropriate treatment.

Scientists do not agree on the cause of atherosclerosis. There are two factors that most investigators will accept as having an important relationship to atherosclerosis: a diet high in fats and cholesterol and high blood pressure.



A community health worker records a patient's medical history . . .

While no statistical proof has been widely accepted, there is some evidence that atherosclerosis is more severe in heavy cigarette smokers. This is one risk factor that can be eliminated without danger to the patient.

Atherosclerosis has been produced in laboratory experimental animals by feeding them diets abnormally rich in cholesterol and saturated fats. Medical people have noticed that individuals who consume a diet low in animal fat and low in protein generally have less atherosclerosis than those consuming the traditionally high fat, high protein, high cholesterol, American diet. The importance of diet to the development of atherosclerotic lesions responsible for stroke is not accepted unanimously by all scientists and medical people.

### *The Problem of Stroke*

The magnitude of the stroke problem in Florida is difficult to estimate because stroke is not a reportable disease. On the other hand, the number of deaths from stroke in Florida can be determined from death certificates. In 1968, a total of 8012 persons died of stroke, or cerebrovascular disease. Public health officials esti-

mate that four out of five persons survive an acute stroke. Using this figure, the Division of Health estimates that 36,000 persons each year live through a serious attack.

It is possible that many deaths from stroke are not accurately recorded on death certificates. If the death certificates of all who died of stroke were combined with those persons who had previously suffered a stroke and then died of other complications, the national figure may be as high as 385,000, instead of the approximate 200,000 recorded in 1967.

Stroke is the third leading cause of death, judging from a count of those death certificates of patients who died of stroke. If we add those who died of other causes after having survived a stroke, the figure may place stroke as second to cardiovascular (heart) disease. (Cancer is currently rated as the second leading cause of death in Florida.)

A count of death certificates can in no way measure the true magnitude of economic loss to the community and the emotional, physical and economical loss to the family whose breadwinner has suddenly been disabled by a serious stroke.

Large differences exist in the mortality from stroke among several geographic areas of the United States. The highest rates are reported in North and South Carolina and Georgia. The lowest rates are recorded in Kansas, Denver and Miami. These differences are not caused by different diagnostic customs.

. . . and take a blood pressure reading.



While cerebrovascular disease and coronary heart disease are caused primarily by the same atherosclerotic disease of the arteries, there is a difference of opinion among medical people as to the relationship of stroke to heart attack. A group of physicians in California found a direct relationship between the two. Another group of investigators were unable to find a correlation between deaths from stroke and deaths from heart attack.

The problems related to stroke that confront public health officials include the following:

- personal problems facing the patient;
- economic and emotional problems facing the family;
- economic problems facing the community; and
- the lack of specific knowledge facing public health and the medical profession.

### *Prevention of Stroke*

The prevention of stroke depends upon the recognition of the stroke-prone individual and the prompt application of appropriate treatment.

**High Blood Pressure (hypertension)** — Physicians have long recognized the tendency of patients with high blood pressure to develop cerebral hemorrhage and the resulting stroke from the blockage of a blood vessel. A group of scientists, studying a New England group of people, discovered that people with normal blood pressure seldom had stroke and those with sustained hypertension had a definite increase in susceptibility to diseases of the arteries or hemorrhage of the brain. The conclusion was reached that the incidence of stroke was higher in untreated or inadequately treated people with high blood pressure than in those with normal blood pressure or those receiving adequate treatment.

Several other studies seem to leave no doubt that the early detection and continuous adequate treatment of high blood pressure is of definite value in preventing stroke in patients with hypertension.

**Temporary strokes (transient ischemic attacks)** — These episodes are caused by temporary and localized cessation of the blood flow through a section of the arteries within the brain. The symptoms are varied and depend upon the area of the brain involved.



A public health nurse takes a blood specimen from a patient. This is sent to a public health laboratory where a number of chemical tests are made. Results of the tests are sent back to the County Health Department. These aid in the diagnosis.



They may be disturbance of vision, hearing, smell, weakness or paralysis of muscle groups, headaches, inability to keep one's balance while standing, sensory disturbances, period of unconsciousness or any combination of symptoms.

The most common cause of these symptoms are transient obstructions of a blood vessel originating from atherosclerotic lesions in the arteries of the neck or in the brain. Other causes may be temporary constriction of arteries, temporary fall in blood pressure, kinking of the arteries of the neck, polycythemia (too many circulating red blood cells), anemia, or transient hypoglycemia (low blood sugar).

These slight strokes constitute the most important factor in the detection of the stroke-prone individual. He needs early attention and diagnosis. The patient should consult his physician when these symptoms appear. Since the attack may last only one to 30 minutes, or as long as 24 hours (which is rare) and usually leaves no permanent damage, the person is often inclined to forget the attack until the second or third occurs. A person who has high blood pressure and these frequent attacks should seek the advice of his physician as early as possible.

**Diabetes** — The New England study showed that the risk of stroke is increased by diabetes. In persons with high blood pressure and diabetes, the risk of stroke is six times greater than in normal persons.

**Hypercholesterolemia** — Several studies have shown that high blood cholesterol is associated with an increase in the risk of stroke — if the person is under 50 years of age. (The relationship to persons over 50 is not so clear.) Again the combination of high blood pressure and high blood cholesterol increases the risk of stroke more than either disease by itself. Every effort should be made to reduce the blood cholesterol in those patients whose family history has an indication of high blood cholesterol and a high incidence of stroke. A new drug, clofibrate, is now being tried to reduce the concentrations of cholesterol and fatty acids in these patients.

**Polycythemia** — This is a condition in which the number of blood cells is increased to the point where the blood becomes thickened. There is an increased tendency to form clots, and the thickened blood reduces the flow through the arteries of the brain. These persons often have emotional problems and can be treated effectively if they consult their physicians before permanent damage has taken place.



**Gout** — This is one of the oldest diseases known to man. It is associated with an increase in uric acid in the blood and body tissues. Many patients with stroke have had high blood uric acid tests. It is considered prudent to treat people with elevated uric acid, even though there are no firm statistics to prove that such treatment has reduced the incidence of stroke.

**Cigarette Smoking** — Cigarette smoking has been found to be associated with an increased risk for all manifestations of atherosclerosis. This has been demonstrated for stroke among men. If a

A patient is given an electrocardiogram (opposite page) which indicates the rhythm of the heart beat. The tracings of the electrocardiogram are made on a strip of graph paper. These will show any abnormalities which may lead to a stroke or heart attack.



person uses cigarettes, one simple and harmless way of reducing the chance of developing a stroke is to quit smoking.

**Heart Disease** — For many years physicians have known that certain types of heart disease were associated with an increased risk of developing a stroke. These conditions were congestive heart failure, coronary heart disease with angina pectoris or myocardial infarction (severe heart conditions) and certain cardiac arrhythmias (irregular rhythms of the heart). The New England study showed that some electrocardiogram (EKG) abnormalities were more strikingly related to stroke than to a risk of a heart attack. The EKG abnormalities were enlargement and thickening of the left ventricular chamber of the heart, and damage to the bundle of nerves that regulated the flow of blood.

(Continued on Page 328)

# CAMP CHALLENGE



is the scene of new courage and experiences for stroke victims. They give up the comforts of their homes for a week of "roughing it" at camp. They learn from each other as they . . .



. . . take part in recreation .

. . . are interviewed by a nurse who is experienced in rehabilitation . . .



. . . go swimming  
ance of the  
and . . .





handicrafts . . .



. . . eat their meals in a dining hall . . .

. . . receive instruction on menus from a dietitian.

with the assist-  
staff . . .





## *Identifying the Stroke-Prone Victim*

From the information available to physicians at the present time, there seems to be little doubt that the stroke-prone individual can be identified by determining if the following conditions have been, or are present:

- temporary and slight strokes;
- sustained high blood pressure;
- diabetes;
- elevated blood cholesterol;
- elevated blood triglycerides;
- heart disease;
- abnormal EKG readings;
- high hemoglobin level;
- elevated blood uric acid;
- cigarette smoking; and
- a family history of stroke.

Most of this information can be obtained by trained persons using electrocardiogram instruments, blood pressure cuffs, and blood tests; and working under the supervision of a physician. The physician could quickly determine the need for further diagnostic studies and the need to start appropriate preventive treatment if presented with a summary of the above information. The physician also needs to have a close relationship with his patient in order that treatment to prevent or postpone a stroke can be individualized.

The stroke problem is an economical problem for the community. A program to locate individuals who have conditions which lead to strokes and refer them to physicians for treatment seems to be a logical approach to the problem at the present time. Physicians are frequently too busy to conduct this type of screening program

The prevention of stroke, in the light of present information, consists of the following:

- Identification of the stroke-prone person;
- Referring the stroke-prone person, with his medical records, to his physician; and
- Emphasizing the need for long-term treatment and follow-up through health education.

During a hypertension screening program in Holmes County Health Department, a patient's blood pressure is taken while he is standing, seated, and lying down.



for an entire community so their special knowledge should be used to give individual preventive advice to stroke-prone groups.

An individual can reduce his chances of developing a stroke by having a screening test done either in a community screening center or in his physician's office, and by following his physician's advice for the rest of his life.

Florida physicians have been cooperating with the Division of Health and some of the County Health Departments by treating people referred to them from screening centers; by assisting in the education of patients; and by emphasizing the need for continuous long-term follow-up. Screening programs are being conducted or planned for Nassau, Baker, Hamilton, Columbia, Washington, Holmes, Walton, Highlands, Glades, Hendry, and Charlotte Counties. Other County Health Departments may soon adopt the program.

### *Hypertension Studies*

High blood pressure seems to be one of the most important contributing factors to atherosclerosis and to stroke. This is true whether the stroke is caused by the blocking of a blood vessel by an air bubble or clot; the coagulation of the blood; or the bursting of a blood vessel.

The Division of Health, in cooperation with the Florida Advisory Council for the Regional Medical Programs and the tri-county health department of Holmes, Washington and Walton Counties, has started a study of hypertension in those three rural counties of Northwest Florida.

Under the program, persons in the county are having their blood pressure measured by health workers trained under the supervision of the County Health Department. Those found to have sustained high blood pressure are referred to the physician of their choice. Those patients who are classed as medically indigent may be treated by physicians in County Health Department clinics.

Preliminary studies of high blood pressure in schoolchildren were made with the cooperation of the Pinellas and Dade County Health Departments and local school boards. These studies showed that almost two per cent of the children tested had elevated blood pressure. The studies suggested that high blood pressure may be a disease that begins in early life and that the prevention of stroke should begin with a survey of high blood pressure in schoolchildren — followed by appropriate treatment.

### *Treatment for Stroke*

The treatment of a patient with a stroke varies with the extent and location of the brain damage and the treatment facilities available. Many stroke patients become depressed and withdrawn because of the sudden disability that they were not prepared to accept.

In many cases the patient with a stroke has been under the care of a physician for other conditions and the physician can diagnose the cause without difficulty. If the stroke victim has not seen a physician prior to his attack, it may be necessary to have a number of diagnostic tests made.

Once the physician has determined the cause and nature of the stroke, there are several things that should be done as soon as possible:

- \* prevent wasting of paralyzed muscles;
- \* prevent contractures and further crippling of the paralyzed arm, hand, leg or foot;
- \* help the patient recover as much use of the leg or arm as possible;
- \* help the patient to correct any speech defect that may have occurred; and
- \* stimulate the patient's desire to improve and to maintain a cheerful attitude despite his disability.

A workman, who was found to have high blood pressure, is examined during a clinic. He is referred to his physician for treatment.

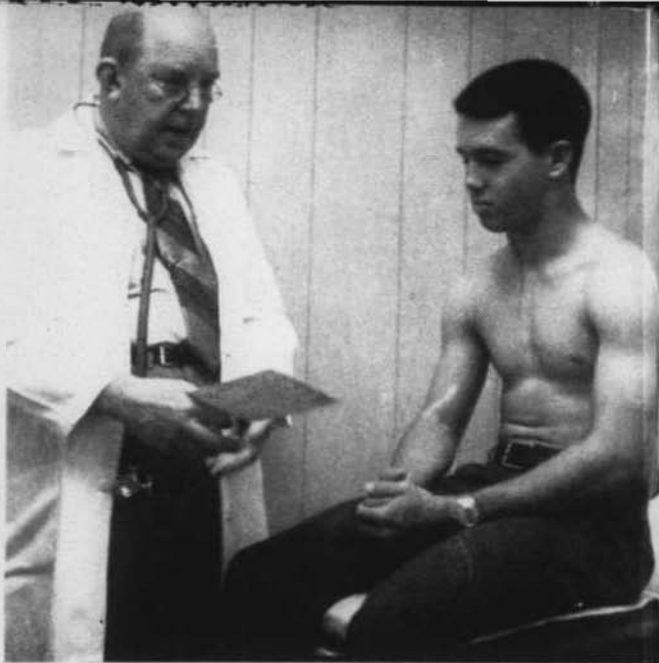


Early care should begin in the hospital before the patient goes home. Occasionally hospital facilities may not be available and the patient must then be treated at home. Many of the 67 County Health Departments and Visiting Nurse Associations have public health nurses who are trained in rehabilitation. These nurses and members of the patient's family may carry out treatment procedures under the direction of the patient's physician.

In addition to the treatment of the specific disability, the physician may also wish to treat the following conditions with the view of preventing additional strokes in the future:

- \* reduce high blood pressure;
- \* bring diabetes under control;
- \* treat temporary strokes with anti-coagulants if the patient has the condition that indicates this type of treatment;
- \* reduce elevated blood uric acid by medication;
- \* reduce the red blood cell count by drawing off blood, if the number of red blood cells is too high; and
- \* if he smokes, encourage the patient to discontinue the use of tobacco.

High blood pressure is not only found in older persons. Teenagers, who have this condition, are sometimes found during high school screening programs.



### *Rehabilitation*

The final rehabilitation of the stroke patient is in reality a continuation of the treatment given following the stroke. Or it may be correctly stated that the rehabilitation starts with the initial treatment.

In the early stages, during the first one or two days after the stroke, it is important to prevent the muscles from weakening or contracting in later weeks and months. The goal is to retain muscle activity and to teach patients to take care of themselves as completely as possible.

Rehabilitation should continue until the patient has reached the maximum of improvement and has been taught to be as self-sustaining as possible. Some form of gainful employment is desirable for psychological reasons, as well as economically. The patient's physician should supervise the various stages in the rehabilitation program. He will prescribe the various exercise programs and indicate when they should be started.

The Mrs. Harrington, who was mentioned at the beginning of this **Health Notes**, found her florist business of great assistance in her recovery. She relearned how to make flower arrangements and two years after her stroke, repotted 450 geranium plants with her good hand.



## *Resources in the Community*

The Division of Health has been fortunate to have the close cooperation of a number of voluntary and official health agencies in working with the stroke problem. Each agency is remarkably organized to make a specific contribution to solving the problems of stroke. In some cases a number of agencies have combined efforts to achieve specific goals.

With the financial assistance of the Regional Medical Program, the Division of Health, with its affiliated County Health Departments, is carrying on several studies seeking methods of preventing strokes. These are the previously mentioned high blood pressure control programs in rural Washington, Walton and Holmes Counties; the high blood pressure survey of schoolchildren in Pinellas and Dade Counties; the cardiovascular screening programs in a number of Florida counties; and a high blood pressure clinic at Duval Medical Center, Jacksonville.

Also, with the assistance of the Regional Medical Program, a computerized electrocardiogram (EKG) sending and recording unit has been set up in Charlotte County Health Department on a trial basis. This unit is connected by telephone to the Computer Control Center of the University of Florida Medical Center in Gainesville for quick screening of individuals and interpretation of EKG tracings.

All electrodes used for the test are placed on the patient at one time and a test can be completed in two minutes. A copy of the tracings is recorded at the Charlotte County Health Department, but the computer in Gainesville can give speedy interpretation and diagrams of the tracings.

One value of the computerized unit is its ability to screen a number of persons in various parts of the state at the same time and interpret the results within minutes. Also, the computer can analyze many tracings within a short time, far surpassing the capabilities of a human heart specialist.

Another special use of the unit is made when a general medical practitioner in a rural area has a patient whom he believes needs an EKG and there is no heart specialist available. The physician can have the patient attached to the computerized EKG unit and receive

a telephone report from the Computer Control Center within minutes. This would speed up the diagnosing of patients who have had a stroke.

The Florida Society for Crippled Children and Adults (Easter Seal Society) has established 10 rehabilitation centers in Florida where stroke patients may receive speech, physical and occupational therapy; family counseling and vocational guidance. A stroke patient in need of rehabilitative services should consult his physician about the services available through the Easter Seal Society which has its headquarters in Orlando.

The Florida Advisory Council for Regional Medical Programs has organized local councils to handle problems of heart disease, cancer and stroke. These councils are composed of people from local communities and are capable of organizing and funding significant programs for the prevention and rehabilitation of persons with stroke.

A study to document causes of stroke and the ability to identify the stroke-prone person has been planned by the Regional Medical Programs. This study will be carried on in cooperation with the Division of Health and Hillsborough and Pinellas County Health Departments.

The Florida Heart Association has cooperated with the Division of Health in conducting training programs for Visiting Nurse Associations and public health nurses in home care for stroke patients. Such home nursing care is carried on by these nurses under the direction of the patients' physicians.

The purpose of the Division of Vocational Rehabilitation of the Florida Department of Health and Rehabilitative Services is to help the disabled person return to work. Stroke clinics have been established by the Division in cooperation with the Easter Seal Centers. Most stroke patients have some type of orthopedic and neurological disorders and these were lessened by occupational, speech or physical therapy.

The Division of Vocational Rehabilitation found that the productive capabilities of the stroke patient are not really known. He may be optimistic when sufficient study and attention is given to his problem. The proper time for the patient to return to work is always a problem and it should be closely evaluated. If the patient is not



A stroke patient receives treatment from a physical therapist in one of the rehabilitation centers established by the Division of Vocational Rehabilitation and the Florida Society for Crippled Children and Adults.

ready, he may lose his confidence and fail; the job may be lost; and the patient's faith in himself may be destroyed.

### *A Camp for Stroke Patients*

A few small miracles have taken place at Camp Challenge. One stroke victim abandoned his wheelchair for leg braces and canes; others learned to swim, smile and laugh. One former singer learned to use his vocal cords again after his stroke and sung a little tune—though a bit off-key.

Staff members of the camp refuse to coddle stroke patients. Campers learn by themselves the extent of their capabilities. Progress made by some stroke patients stimulate more timid ones to try harder and to develop happier attitudes.

Far from the usual clinical rehabilitation setting, the camp's "roughing it" atmosphere also gave valuable teaching experience to medical people and rehabilitative experts. They learned how much a stroke patient could do when he was taken out of his normal environment.

The camp for stroke victims, which has operated one week annually for the past three summers, was established through the



During a home visit, a public health nurse takes the blood pressure of a patient while she is seated in her kitchen. Regular checking of the blood pressure is necessary when a patient is on medication for hypertension.

cooperation of the Division of Health, the Division of Vocational Rehabilitation, and the Crippled Children's Commission of the Florida Department of Health and Rehabilitative Services; the Florida Society for Crippled Children and Adults; the Florida Heart Association; the University of Florida Medical School, the Florida Industrial Commission; and a number of other state and voluntary health agencies. The staff consisted of physicians; nurses; speech, physical and occupational therapists; family counselors; and nutritionists.

### *Education*

The prevention of stroke is almost entirely dependent on how people live. The general public needs to know how to live a prudent life—eat foods recommended by physicians and nutritionists which are low in saturated fats and cholesterol, recognize danger signals for stroke, and seek and follow the advice of their physicians.

It is also essential that practicing physicians keep themselves alert to the advances in diagnosing and treating of cerebrovascular diseases.

The health education of the population is one of the functions of the County Health Departments. They distribute pamphlets and booklets and contribute news articles to newspapers and television stations. Staff members frequently speak before civic clubs when requested.

There is a great need of community resources to teach the family of the stroke victim just how to take care of the patient and how to assist in the important task of rehabilitation. Public health nurses; physical and occupational therapists; and the patient's physician can frequently act as a team to teach both the patient and his family. The patient who has sustained even the slightest impairment from a stroke may need to be referred to a rehabilitation center—if one is available.

Unfortunately many patients learn of stroke for the first time after they have had one.

### *Pamphlets and Films*

The Division of Health has pamphlets and films on stroke and rehabilitation of stroke patients. These may be secured from the Health Education Section, Division of Health, Box 210, Jacksonville, Florida 32201

Pamphlets for the general public include:

**Facts About Stroke**

**Good News for Stroke Victims**

The pamphlet, **Strike Back at Stroke**, is available for distribution by physicians or nurses.

Films on stroke may be borrowed by organizations, schools and colleges, civic clubs and professional groups by writing to the Division of Health's Audio-Visual Library at the above address: These films include:

For students and adult audiences:

**Second Chance**

**Stroke**

For Professional audiences:

**Cerebral Vascular Diseases: Challenge of Management**

**New Diagnostic Techniques for Stroke: Retrograde Cerebral Angiography**

**Prevention of Disability from Stroke**

**Stroke—Early Restorative Measures in Your Hospital**



The Florida citizen needs to know the following facts about stroke:

- \* the condition is caused by the sudden loss of the blood supply to a localized part of the brain;
- \* the character of symptoms depends on the location of the brain damage;
- \* the blood supply may be stopped by a clot, coagulation of the blood or a hemorrhage;
- \* the most common underlying cause of all three is atherosclerotic disease of the arteries of the neck and brain; and
- \* the prevention of stroke should begin with the prevention of atherosclerosis.

The prevention of atherosclerosis should begin in childhood or early adult life and involves:

- a diet low in saturated fats and cholesterol;
- adequate physical exercise;
- avoidance of cigarette smoking;
- adequate control of high blood pressure;
- careful control of diabetes;
- early detection and appropriate treatment of certain disease such as gout, and polycythemia;
- prevention of obesity, not because it is a cause, but because it increases the chances of stroke in those persons with high blood pressure and diabetes; and
- the prompt investigation and appropriate treatment of temporary or slight strokes.

Voluntary and state agencies which work with stroke victims are:  
Florida Society for Crippled Children and Adults (Easter Seal Society), 903 Lee Road, Orlando, Florida 32810.

Florida Heart Association, 4126 16th Street North; St. Petersburg, Florida 33703.

Florida Department of Health and Rehabilitative Services:  
Division of Vocational Rehabilitation, 725 South Bronough Street, Tallahassee, Florida 32304  
Crippled Children's Commission, 107 West Gaines Street, Tallahassee, Florida 32304.

# Division of Health of the Florida Department of Health and Rehabilitative Services

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